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'THE AUK,' published quarterly as the Organ of the AMERICAN ORNITHOLOGISTS' UNION, is edited, beginning with volume for 1912, by Dr. WITMER STONE.

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1. CRESCENT LAKE FROM THE WEST.
2. WESTERN END OF CRESCENT LAKE.

THE AUK:

A QUARTERLY JOURNAL OF

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VOL. XXXIII. OCTOBER, 1916. No. 4.

THE LAKE CRESCENT REGION, OLYMPIC MOUNTAINS, WASHINGTON, WITH NOTES REGARDING ITS AVIFAUNA.

BY SAMUEL F. RATHBUN.

Plates XIX–XXI.

As there exists only a general knowledge of the ornithology of the country in which the following observations were made, and as the region is but imperfectly known, it is thought advisable to give in connection with the list of species, a description of the country, the forest conditions that prevail, and also some idea of the flora, since these factors and the avifauna are correlative. Regarding the climatic conditions, however, little can be definitely stated as there are no data of an official character available, although the importance of this factor is its relationship to the bird life is fully recognized.

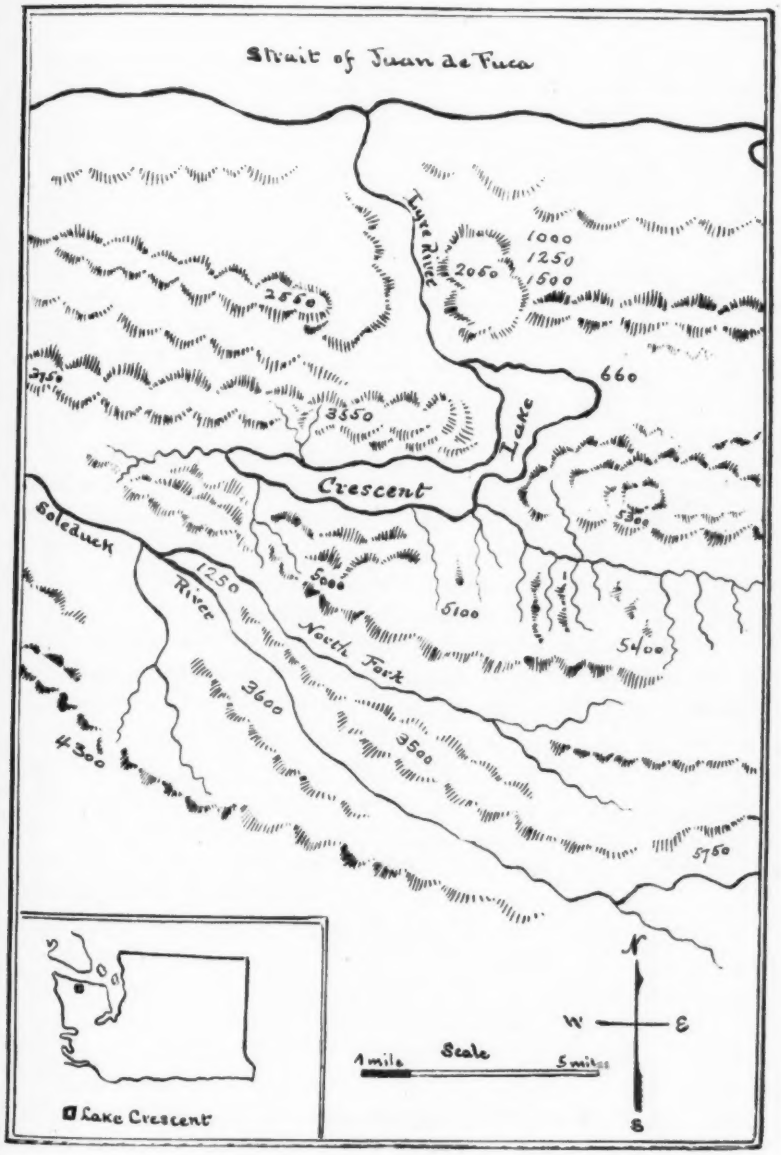
The writer's visit to the region covered the greater part of May and early October, 1915, the latter half of April and June, and early July, 1916; during this period all the territory immediately contiguous to the lake was thoroughly investigated, and numerous trips were made along the few trails adjacent thereto, as well as up the mountain sides. As a result, much knowledge was obtained regarding the species enumerated below but we were impressed with the fact that in a region so diversified, considerable future observation is required before a definite knowledge of its

avifauna is obtained, especially of the detailed distribution of the species.

At an elevation of 550 feet above sea level, Lake Crescent, or Crescent Lake as it is sometimes called, is located in the northwestern part of the State of Washington in the Olympic Peninsula at the very threshold of the Olympic Mountains. Its area is six and eight-tenths square miles, it has an extreme length of about ten miles with a varying width of from one half to one and a quarter miles, excepting at its lower end where it expands to three miles. The shore line is approximately twenty-five miles, but is very irregular with many indentations. As the name implies, the lake is of a somewhat crescent shape, the result of this peculiarity being that while the northern or lower end is less than five miles distant from the Strait of Juan de Fuca, the western or upper end lies within the Olympic range, being surrounded by mountains that constitute a part of this system. Its shores in general are bold and rugged, and in places the mountains rise abruptly from the water, which is clear and transparent as is usually the case in mountain lakes.

The beaches along the lake have been formed in the past by the detritus from the mountains. They are very narrow and invariably covered or overhung with a deciduous growth of shrubs or trees of small size, which extend back only to the base of the mountains. The latter are in turn clothed with a dense coniferous growth extending clear to their summits. In places on the mountain sides are seen the effects of former forest fires as evidenced by the burned and dead timber, but these are quite limited, the general aspect being an unbroken forest. These burned areas are practically impenetrable, for over the confusion of fallen trees has sprung a dense growth of young conifers interspersed in spots with small deciduous trees, all this in turn being penetrated by the still standing dead timber.

At the northwestern extremity of the lake is its outlet, the Lyre River, which following a valley flows in a meandering line some six miles before discharging its waters into the strait. A marked difference exists in the topographical aspect of the section about this lower end as compared with the upper, as here the mountains are of less elevation, being somewhat broken, and represent the water shed between the lake and strait, and this particular section



LOCATION OF CRESCENT LAKE.

is also more open in its appearance, having been somewhat logged off in the past and to some extent swept by fires.

About three miles up the lake from its outlet is the "narrows," so called locally, this being a contraction of the lake to a width not exceeding one half a mile. Here the mountains rise on the western side to an elevation of 2800 feet, on the eastern side to 5300 feet, thus forming a gateway to the upper or larger portion of the lake lying within the Olympic Mountains proper, which attain an extreme altitude of 3550 feet on the north side and 5000 feet on the south side. These two ranges do not coalesce but remain separate, the former continuing in a general westerly direction paralleling the strait, the latter trending more towards the southwest, while between them lies a valley running from the head of the lake and eventually descending to the Soleduck River which flows westerly and southwesterly, discharging its waters into the Pacific.

We have been thus explicit regarding the topography of the region, as in a degree it is reflected in the distribution of some of the species, several of which were found confined entirely to the lower end of the lake, while in others a marked difference existed in the relative abundance of the individuals at its two extremities.

All the altitudes given above are based on the contour map accompanying the paper from which the following data relative to forest conditions are quoted.[1]

"Township 30 North, Range 9 West." "This township, lying in the northern part of the reserve, includes nearly all of Lake Crescent. The surface of the township is rugged and mountainous, the only exception being along the north line and the valley of Lyre River. The soil is clay in the lowlands and gravel upon the mountains. Underbrush is very dense. This township is heavily timbered, mainly with fir and hemlock, with a little cedar and spruce."

"Forest conditions in T. 30 N., R. 9 W.

Timbered area	acres	22,336
Lake area	do	4,352
Burned area	do	1,115

[1] Professional Paper No. 7 — Series H, Forestry, 4. Department of the Interior, United States Geological Survey, Forest Conditions in the Olympic Forest Reserve, Washington, from notes by Arthur Dodwell and Theodore F. Rixon. Government Printing Office, Washington, 1902. pp. 86–87.

Total stand of timber	feet B. M.	876,250,000
Average stand per acre	do	40,000
Depth of humus	inches	3
Litter		Light

Statistics of forest trees.

Species	Stand Million ft. B. M.	Height Feet.	Diameter Inches.	Clear Feet.	Dead Per cent.	Diseased Per cent.	Age Years.
Red fir	549¾	170	36	45	5	7	194
Cedar	48½	115	31	24	9	25	162
Hemlock	203½	122	16	23	6	9	138
Spruce	16½	174	45	54	2	5	192
Lovely fir	58	163	34	47	2	6	166"

Apparently but little change has taken place in the conditions of the region since the date of the report from which the foregoing was taken; as we have been fairly familiar with the region for the past eighteen years, having made hunting trips therein on various occasions.

No better general description of the flora of the region, as we found it, can be given than the following, by Mr. Charles V. Piper. "The vegetation of the uplands throughout the Pacific area in Washington is a plant association in which the red fir predominates. The size of this tree and the luxuriance of the associated plants varies with character of the soil, but otherwise the formation is remarkably uniform. In forests in dry or sterile soils the commonest undershrubs are salal (*Gaultheria shallon*) and Oregon grape (*Berberis nervosa*), while the bracken fern (*Pteridium*) is the most conspicuous herb. Shrubs or trees of Scouler willow (*Salix scouleriana*) are also constantly associated.

In better soils the same shrubs remain, but the salal especially becomes much more luxuriant, often forming almost impenetrable thickets. When, however, the red fir is at its best, forming dense forests into which the sun scarcely penetrates the salal and Oregon grape are usually much less conspicuous. Under such circumstances the ground is covered with a thick layer of mosses and scattered crowns of Chamisso's shield fern (*Polystichum munitum*). Among the few shrubs which thrive in such dense shade is the red huckleberry (*Vaccinium parvifolium*). Following the destruction of a red fir forest by logging and subsequent burning, as has been

too commonly the case, there is a marked sequence in the plants that appear, usually as follows: The first are nearly always the fireweed (*Epilobium spicatum*) and the bracken (*Pteridium*). These are closely followed by the dewberry (*Rubus macropetalus*) which the following year fruits heavily and then gradually disappears. The thimbleberry (*Rubus parviflorus*) is often abundant also, as is red-flowered currant (*Ribes sanguineum*). By this time the Scouler willow is conspicuous, and in wet places the red alder (*Alnus oregana*). The two trees dominate the vegetation until the young red firs which spring up in a very dense growth have become large enough to supercede them. The red fir is so completely the dominant tree in the region that as a rule it quickly reforests itself whenever destroyed."[1]

The climate of the region is mild and equable with no extremes in temperature particularly at and near the lake level. The region has an abundant precipitation occurring chiefly between October and July, and an evidence of these prevailing climatic conditions is reflected in the luxuriant growth of vegetation that everywhere abounds.

Although reference to the list will show some few species that are fairly representative of the Canadian Zone, the region is mainly Transition, especially when the character of its dominant vegetation is taken into consideration. The red fir (*Pseudotsuga mucronata*) which forms so large a proportion of the total forest of the region, is a characteristic Transition Zone plant.

In regard to the list which follows the absence of a larger number of species of the water birds, is due to the fact that, at the season during which our observations were made, very few of these are present in the region, but from late autumn until early spring the lake is more or less a temporary resort for many of the maritime birds, that here find a refuge from the storms prevailing at times along the coast to the northward of the region under consideration. In conclusion we wish to express our thanks to the Bureau of Biological Survey at Washington, D. C., for the identification of specimens forwarded, a courtesy that is much appreciated.

[1] Smithsonian Institution, United States National Museum, Contributions from the United States National Herbarium, Volume XI. Flora of the State of Washington by Charles V. Piper, Washington, 1906.

1. LOWER LAKE LOOKING WEST TOWARD LYRE RIVER.
2. NORTH SIDE OF UPPER LAKE.

1. **Æchmophorus occidentalis.** WESTERN GREBE.— Noted as a rather common migrant in April and October. One taken October 10.

2. **Podilymbus podiceps.** PIED-BILLED GREBE.— Seen occasionally in April, but was common on the lake in October.

3. **Gavia immer.** LOON.— On a number of occasions during April, May and October, this species was seen and heard about the lake.

4. **Larus glaucescens.** GLAUCOUS-WINGED GULL.— Of rather common occurrence in April and October.

5. **Larus occidentalis.** WESTERN GULL.— On several successive days in the latter part of April, a number of adults of this species were seen on and about the upper part of the lake.

6. **Larus heermanni.** HEERMANN'S GULL.— An adult female was taken on the lake June 20, 1916. It was in somewhat worn plumage and very lean flesh, and its stomach entirely devoid of contents.

7. **Sterna paradisæa.** ARCTIC TERN.— On April 15 a flock of about fifteen were seen in flight about the lake. The next day four were noted and on May 3 following a single individual was observed swimming about on the lake, it allowing an approach to within one hundred feet.

8. **Mergus americanus.** MERGANSER.— Seen at various times during April and May. Breeds along the larger mountain streams.

9. **Anas platyrhynchos.** MALLARD.— Noted on a number of occasions in October.

10. **Clangula clangula americana.** GOLDEN-EYE.— Single individuals were seen about the lake a number of times during April.

11. **Histrionicus histrionicus.** HARLEQUIN DUCK.— On April 24 two males and a female of this beautiful species were seen, and on the following day one of the former was secured.

12. **Oidemia deglandi.** WHITE-WINGED SCOTER.— May 18, 1915, three were observed flying up the lake.

13. **Ardea herodias fannini.** NORTHWESTERN COAST HERON.— A pair of these birds were noted at various times during the entire period of our stay at the lake, and evidently nested in proximity thereto.

14. **Fulica americana.** COMMON COOT.— Several pairs of these birds could always be found in the small marsh near the source of the Lyre River during the breeding season, but the species was not seen in October.

15. **Lobipes lobatus.** NORTHERN PHALAROPE.— Noted but once, when a small flock was seen on the lake early in October.

16. **Lophortyx californica californica.** CALIFORNIA QUAIL.— Northeast of the Lyre River is a limited section that has been logged and subsequently burned over, and here several times in October we came across a few of these Quail.

17. **Dendragapus obscurus fuliginosus.** SOOTY GROUSE.— Fairly common and although in April and May seemingly restricted to and near the semi-barren slopes at a considerable altitude on the mountain sides, from which its peculiar hooting note could be heard almost any day; in October it was found much lower and at times not far above lake level.

18. **Bonasa umbellus sabini.** OREGON RUFFED GROUSE.— Not common and generally found in the territory adjacent to the lake, but owing to the expanse of forest it was seldom seen.

19. **Columba fasciata fasciata.** BAND-TAILED PIGEON.— On May 22, 1915, four were seen in flight above the timber, and June 23, 1916, a juvenile scarcely able to fly, was found near the lake.

20. **Accipiter velox.** SHARP-SHINNED HAWK.— At the eastern extremity of the lake on May 28, we came across a pair of these birds that were watched for some time. The species was also noted in October.

21. **Buteo borealis calurus.** WESTERN RED-TAIL.— Was seen and heard on several occasions in the timber near the lake in May and October.

22. **Haliæetus leucocephalus leucocephalus.** BALD EAGLE.— A pair were often seen about the lake, particularly the upper part where for years has been located a nesting site.

23. **Falco columbarius suckleyi.** BLACK PIGEON HAWK.— One record only, October 12, a single bird which appeared to be in unusually dark plumage.

24. **Falco sparverius phalæna.** DESERT SPARROW HAWK.— On May 28, one was heard and seen at the lower end of the lake, the only time the species was noted.

25. **Strix occidentalis caurina.** NORTHERN SPOTTED OWL.— During the night of October 12, the weird notes of this bird shifting from place to place were heard in the forest along the lake near where we were located, and although the weather was very stormy, its notes continued with but slight intermission until daybreak.

26. **Otus asio kennicotti.** KENNICOTT'S SCREECH OWL.— Near the western end of the lake on various evenings in April and May, we heard the notes of this bird many times repeated, coming from the forest near the water's edge.

27. **Bubo virginianus saturatus.** DUSKY HORNED OWL.— On several occasions in April and May, this Owl was heard at night hooting in the forest.

28. **Glaucidium gnoma californicum.** CALIFORNIA PYGMY OWL.— One seen July 2, in open timber on the mountain side at an elevation of 1700 feet above the lake.

29. **Ceryle alcyon caurina.** WESTERN BELTED KINGFISHER.— Not common, but noted at various times during the period of our stay at the lake.

30. **Dryobates villosus harrisi.** HARRIS'S WOODPECKER.— Quite common and generally found in the more open forest not far from the lake, although occasionally seen in the partly dead timber on the mountain side. A nest found May 24, contained fully fledged young.

31. **Sphyrapicus ruber notkensis.** NORTHERN RED-BREASTED SAPSUCKER.— Although observed but twice, this in May and October, its frequent occurrence was indicated by the numerous perforations in the bark of many of the trees in the region.

32. **Phlœotomus pileatus pileatus.** PILEATED WOODPECKER.— Although not very common, was quite often seen or heard in the forest on the mountain side.

33. **Asyndesmus lewisi.** LEWIS'S WOODPECKER.— On May 2, 1916, one was seen in tall timber near the lake, and on the following day, four at a point about ten miles east of the lake's lower end.

34. **Colaptes cafer saturatior.** NORTHWESTERN FLICKER.— Not very common in April, May and June, but during October was seen frequently and was more generally distributed.

35. **Chætura vauxi.** VAUX'S SWIFT.— Seven of these swifts were seen on June 29, circling about above the high timber in the vicinity of the lake, and the species was also noted in the valley of the Soleduck River, six miles west of the head of the lake.

36. **Selasphorus rufus.** RUFOUS HUMMINGBIRD.— Was common throughout the region during May and June, but particularly so near lake level. On several occasions during the latter part of May, individual birds were seen carrying nesting material.

37. **Nuttallornis borealis.** OLIVE-SIDED FLYCATCHER.— Along the entire length of the lake in May and June, the characteristic note of this species was heard from the mountain side, but apparently each pair of the birds had a more or less defined territory of its own. They could readily be located as they almost invariably perched on or near the top of some lofty evergreen tree, rarely descending even during the frequent rainy spells.

38. **Myiochanes richardsoni richardsoni.** WESTERN WOOD PEWEE. — Noted in May, June and July and not very common. A species of irregular distribution in the region, being oftener found about the lower part of the lake, particularly in the vicinity of the Lyre River. We have three records only for the upper lake section.

39. **Empidonax difficilis difficilis.** WESTERN FLYCATCHER.— Although not common was quite well distributed, being restricted to no particular locality. Noted in May, June and July.

40. **Empidonax trailli trailli.** TRAILL'S FLYCATCHER.— Of uncommon occurrence and only seen or heard in the alder and willow thickets, along or near the shore of the lake.

41. **Empidonax hammondi.** HAMMOND'S FLYCATCHER.— Rather common. Although at times found on the mountain side, it was more often heard or seen in the timber fairly adjacent to the lake. A shy retiring species and not easy to secure.

42. **Empidonax wrighti.** WRIGHT'S FLYCATCHER.— Wright's was the only Flycatcher that we found in the mountains at any considerable elevation, and on a few occasions in May and June it was also noted in the region near lake level.

43. **Cyanocitta stelleri stelleri.** STELLER'S JAY.— Only two of these birds were heard or seen in the region from April to July, but in October it was observed more frequently.

44. **Perisoreus obscurus obscurus.** OREGON JAY.— During April it was common in the vicinity of the lake, at this time being associated in small flocks that were feeding on a winged insect very abundant near the water's edge. But after early May the species was seldom seen, evidently having retired to the more elevated sections as from this date we rarely noted it below an altitude of 1000 feet. A breeding female was taken June 22 at an elevation of about 800 feet. Was quite common about the lake in October.

45. **Corvus corax principalis**. NORTHERN RAVEN.— Two were seen in October in some tall dead timber on the mountain side above the lake. Also noted in the valley of the Soleduck River.

46. **Corvus caurinus.** NORTHWESTERN CROW.— Apparently of irregular occurrence in the region. Our records are, May 26, 1915, a single bird feeding along the lake shore near the source of the Lyre River; April 23 and 27, 1916, a total of three seen about the upper part of the lake.

47. **Agelaius phœniceus caurinus.** NORTHWESTERN RED-WING.— Near the outlet of the lake is a very small marsh restricted to a bit of the shore, and here is located a little colony of this species during the spring and summer months.

48. **Loxia curvirostra minor.** CROSSBILL.— At various times during October, small flocks of Crossbills were seen in the timber along the lake and on the mountain side.

49. **Astragalinus tristis salicamans.** WILLOW GOLDFINCH.— Not common. Noted only in May and June, when a few were heard and seen on different occasions.

50. **Spinus pinus**. PINE SISKIN.— In the more open section about the lake's lower end, the Pine Siskin was quite common in May, although only occasionally seen around the upper portion of the lake. Was rarely noted in October.

51. **Passerculus sandwichensis sandwichensis**. ALEUTIAN SAVANNAH SPARROW.— In October was found about the lake feeding along the rocky shores, but was not at all common, seldom more than a single bird being seen at a time.

52. **Zonotrichia leucophrys nuttalli.** NUTTALL'S SPARROW.— Uncommon throughout the region and of local distribution during May and June, a few being found in the section near the Lyre River and two along the upper lake. Not noted in October.

53. **Zonotrichia coronata.** GOLDEN-CROWNED SPARROW.— Not uncommon in April, the first arrival being noted the 22d and by the 30th all had departed. In October somewhat more common, being found about the borders of the brushy clearings along the lake, and on these occasions the individuals were associated in small flocks.

54. **Junco hyemalis connectens.** SHUFELDT'S JUNCO.— Common throughout the region although somewhat localized in its distribution, being partial to the vicinity of the more open spaces and was often observed along the lake shore about the edge of the timber. All the Juncos collected

VIEWS IN THE FOREST BORDERING CRESCENT LAKE.

between April and October proved to be of this subspecies identified as *shufeldti* at the Biological Survey.

55. **Melospiza melodia rufina.** SOOTY SONG SPARROW.— Although Song Sparrows were noted to an extent all through the region, this was more often the case in the section about the lake's lower end and the vicinity of its shore. All specimens secured proved to be of this form, among them a breeding female taken May 21.

56. **Pipilo maculatus oregonus.** OREGON TOWHEE.— Not common. During May and June seen only in the lower lake region, in and about the old burns and clearings. In October was more generally distributed.

57. **Piranga ludoviciana.** WESTERN TANAGER.— Was first seen May 23 at the lower end of the lake, by the 26th it had become fairly common throughout the region, as from this date its song was often heard and birds frequently seen.

58. **Hirundo erythrogastra.** BARN SWALLOW.— During May and June a very limited number of these swallows were seen, there being approximately six pairs in the immediate vicinity of the lake, a majority of which were restricted to the section near the source of the Lyre River.

59. **Tachycineta thalassina lepida.** NORTHERN VIOLET-GREEN SWALLOW.— Locally, restricted, a number of pairs being seen in the river section where they were nesting, and three pairs around some outbuildings on the southeast side of the narrows.

60. **Vireosylva gilva swainsoni.** WESTERN WARBLING VIREO.— Fairly common during May, June and July and quite well distributed, but showed a partiality for the proximity of the lake here being found near the clearings in which there was a growth of the large leaved maple, each of such localities seeming to be occupied by a pair of the birds as evidenced by their notes and song. The first arrivals were noted May 1.

61. **Lanivireo solitarius cassini.** CASSIN'S VIREO.— Not common. Observed in May and June and only in the lower lake section, here found in the young firs and adjacent deciduous growth.

62. **Vermivora celata lutescens.** LUTESCENT WARBLER.— Not very common, being noted only in and about the deciduous growth along and somewhat near the lake.

63. **Dendroica æstiva brewsteri.** CALIFORNIA YELLOW WARBLER.— Found confined to the lower lake section, where although seen on numerous occasions, at no time was it at all common.

64. **Dendroica auduboni auduboni.** AUDUBON'S WARBLER.— Not uncommon during the latter half of April and in early May at which period it was migrating, for later the species although of regular occurrence, was only occasionally seen or heard. An adult male taken May 30.

65. **Dendroica nigrescens.** BLACK-THROATED GRAY WARBLER.— On May 22, one was seen and heard singing in a clump of young firs on the edge of an old clearing, this being the only time the species was noted.

66. **Dendroica townsendi.** TOWNSEND'S WARBLER.— This species was so abundant as to be almost characteristic of the region. Its song

was heard in the tall timber along the entire lake and up the mountain sides as far as we ascended, although it appeared to be more abundant from lake level up to about 1800 feet elevation. Climatic conditions had no effect on its tendency to song which was heard intermittently during the entire day, but owing to the habit of confining itself to the tops of the tall coniferous trees, it was difficult to locate the birds. On a few occasions early in the morning, individuals of both sexes were found in the low growth around and in the small clearings, and a female collected May 22, on dissection showed that oviposition would soon begin. The first arrival was noted April 26, the next the following day, and on the 30th the species was quite common throughout the region.

67. **Dendroica occidentalis.** HERMIT WARBLER.— The song of this warbler was heard occasionally in May, June and July and by patient watching one might obtain a glimpse of the bird high up in the evergreen forest.

68. **Seiurus noveboracensis notabilis.** GRINNELL'S WATER-THRUSH. — On May 26 in the lower lake section, this bird was heard singing at intervals for the space of nearly a half hour, during which time it restricted itself to a limited area along the rocky and boulder strewn shore, here overgrown with a tangle of deciduous shrubs. The song of the species was also heard at one other subsequent time.

69. **Oporornis tolmiei.** MACGILLIVRAY'S WARBLER.— Not uncommon, particularly in the section about the lower lake. The first arrival was noted May 21 and the species heard each day up to the 24th, on which date it became common as evidenced by its song. In migration it apparently took three days to travel the entire length of the lake.

70. **Wilsonia pusilla chryseola.** GOLDEN PILEOLATED WARBLER.— Was first heard and seen April 28 and by May 1 had become common; particularly so from the narrows to the head of the lake, being found mostly in the deciduous growth along and near the shore, although several times at an elevation of 1000 feet here restricted to the small partially open spots likewise having a similar growth. Next to *D. townsendi* the most abundant of the Mniotiltidæ and as common as we have ever seen the species in any part of its habitat with which we are acquainted.

71. **Cinclus mexicanus unicolor.** DIPPER.— From April to July although seen at times about the lake, at this period it was quite common along the mountain streams. In October however, we found it often in the former locality.

72. **Thryomanes bewicki calophonus.** SEATTLE WREN.— In the more open section about the lower part of the lake, this species was heard singing on two different occasions in May.

73. **Troglodytes aëdon parkmani.** WESTERN HOUSE WREN.— One record only, May 2, 1916, on which date a single bird was seen and heard singing in a small clearing in the upper lake section.

74. **Nannus hiemalis pacificus.** WESTERN WINTER WREN.— Common. This was one of the few species found quite evenly distributed

throughout the forest in the region from lake level to a considerable elevation, in May its song being heard at almost any time during the day. May 21 we noted parent birds accompanied by fully fledged young. It was equally as common in October.

75. **Certhia familiaris occidentalis.** CALIFORNIA CREEPER.— Noted in May and June only, being seen on three occasions in the forest.

76. **Sitta canadensis.** RED-BREASTED NUTHATCH.— Although not common appeared quite generally distributed, but was heard more often in the depths of the forest.

77. **Penthestes atricapillus occidentalis.** OREGON CHICKADEE.— From our observations, of rare occurrence in the region, being seen only on two occasions, both in May.

78. **Penthestes rufescens rufescens.** CHESTNUT-BACKED CHICKADEE.— One of the common birds of the entire region and of general distribution, but more often seen in the deciduous growth along the lake in the proximity of the conifers and the open forest spots. At times observed in the heavy timber associated with *R. s. olivaceus*, when it would be found near the tops of the tall trees.

79. **Regulus satrapa olivaceus.** WESTERN GOLDEN-CROWNED KINGLET.— Rather common being well distributed, although noted more frequently in the forest on the mountain side.

80. **Regulus calendula grinnelli.** SITKA KINGLET.— Quite common as a migrant, the first being seen April 19, the last on May 3. At this time invariably found in company with *P. r. rufescens*, or *D. a. auduboni*, and on occasions all were found associated.

81. **Myadestes townsendi.** TOWNSEND'S SOLITAIRE.— Our only record is that of a pair we noted in the Soleduck River valley, about six miles west of the head of the lake. It is possible however that the species might prove of more common occurrence in the higher altitudes.

82. **Hylocichla ustulata ustulata.** RUSSET-BACKED THRUSH.— Found quite common throughout the entire region but was partial to such localities as the old clearings and burns that were fringed with a growth of deciduous trees and shrubs. Several times heard in the mountains up to an elevation of 1200 feet. First seen May 21, and by the 27th was quite generally distributed.

83. **Hylocichla guttata guttata.** ALASKA HERMIT THRUSH.— Not uncommon in the region, the first being seen on April 24, from which date its beautiful song was quite often heard in the forest, particularly near the lake. In Autumn was first noted October 9, and at this season we found the species fairly common, but it was more often seen along the narrow beaches overhung with deciduous growth.

84. **Planesticus migratorius propinquus.** WESTERN ROBIN.— One of the common species, being well distributed. It showed a partiality however for the more or less open tracts that in past years had been burned over and later covered with a young growth, and was rather more abundant around the few cultivated areas at the lower end of the lake. Quite often

we came across individual birds in the dense forest. In October was not nearly so common.

85. **Ixoreus nævius nævius.** VARIED THRUSH.— Rather common being found distributed in the forest fairly adjacent to the lake, but less so up the mountain side. Its delightful song was heard each day in May, especially at morning and evening and during the rainy and misty weather, being in perfect harmony with its wild environment. Also commonly seen in October.

MIGRATION OF THE YELLOW-BILLED LOON.[1]

BY JOSEPH DIXON.

THE lack of information relative to the migration routes of the Yellow-billed Loon (*Gavia adamsi*) has been shown most forcefully in Professor W. W. Cooke's interesting article in 'The Condor' (vol. XVII, 1915, pp. 213–214).

The tentative theories advanced by Cooke, await, of course, the support or contradiction of further data, and certain field observations of the writer are here set down as a possible contribution toward the ultimate solving of the problem.

The Harvard Alaska-Siberia Expedition, of which I was a member, was obliged, on account of unfavorable ice conditions, to spend considerable time in 1913 and 1914 in what, according to the A. O. U. 'Check-List', is supposed to be the center of the breeding range of this species, the Arctic coast of Alaska between Point Barrow and the mouth of the Mackenzie River. This expedition was financed in part by Mr. John E. Thayer, to whom the writer is indebted for permission to use such of the information obtained, as is needed in this paper.

We naturally observed the arrival of the Yellow-billed Loons with interest, and, during the time we spent there, especial attention was given to the loons in general, in the hope of finding an authentic nest of the Yellow-bill. Not only did we fail to find any

[1] Contribution from the Museum of Vertebrate Zoölogy of the University of California.

nest of this species, but none of the nine males and five females taken between June 3 and July 16 showed, upon dissection, any signs of breeding. (See Brooks, Bull. Mus. Comp. Zool., vol. LIX, 1915, p. 368.)

Doctor R. M. Anderson, leader of the Southern Division of the Canadian Arctic Expedition, in discussing this problem with me in the winter of 1913, assured me that the four seasons he had spent between Point Barrow and the mouth of the Coppermine River had been equally barren as regards definite breeding records of this species. In Stefánsson's 'My Life with the Eskimo' Macmillan Co., New York, 1913, p. 456) Anderson says: "The Yellow-billed Loon is found in most places on the Arctic coast in summer, from northwestern Alaska to Coronation Gulf but does not seem to be very common anywhere. . . . I have never been able to find a nest of this bird or hear of any white man or native in the North who has ever done so. The Common Loon or Great Northern Diver occasionally straggles to the Arctic Coast, both in Alaska and Canada." He mentions the occurrence of the Common Loon at Flaxman Island, in Alaska, and Coronation Gulf on the Canadian side.

R. MacFarlane (Proc. U. S. National Museum, vol. 14, 1891, p. 416) states, regarding the nesting of the Yellow-billed Loon: "During the period of reproduction this loon abounds in considerable numbers in Franklin and Liverpool bays, where several examples were shot. It is also sometimes met with on the larger lakes of the interior. Although most anxious to possess eggs of this species, we all failed to discover even one well authenticated nest, while it is possible that the two *adamsii* eggs referred to on page 452, of vol. II, of the aforesaid Water Birds of North America, may have belonged to the Great Northern Diver."

Grinnell (Pacific Coast Avifauna, No. 1, 1900, p. 70) failed to find the species at all during two summers spent at Kotzebue Sound, where it had previously been supposed to be of common occurrence. Altogether, careful analysis of the various Alaskan records of the Yellow-billed Loon, do not disclose any definite or authoritative information as to breeding habits or habitat.

The results of our observations of the migrations of the Yellow-billed Loon do not accord in all particulars with the conclusions

of Cooke (loc. cit.), but they do support his theory regarding the probable spring migration route of the species. Although only negative information can be contributed as to the fall route traversed, I think that if we had but enough of such negative information we might be able to solve the problem. In other words we may find out where the species migrates by learning that it does not follow certain other routes.

The first Yellow-billed Loon collected by us in 1914 was a female taken on June 3 at Humphrey Point, Arctic Alaska. This is roughly two-thirds of the way from Point Barrow to the mouth of the Mackenzie River, and near the Alaska-Canada boundary line. Other loons had been seen a few days before this, some of which I believe were Yellow-bills. From this date on until July 16, when we went aboard the ship, Yellow-bills were common. That is, from three to twenty were seen in one day (twenty-four hours) flying along the lagoons or open leads a few rods offshore. A few cut across the tundra, but our hunters out on the sandspits waiting for flights of brant and ducks, who observed and kept a record of the different species that passed, said that most of these loons followed the lagoons. After June 20 several were seen, paired, in large ponds a few miles inland, but they did not breed there, although they hung around up to the time that we left (July 16). Pacific Loons nested in the same ponds where the Yellow-bills were found, so that an inexperienced person, even with the best intentions, could easily confuse the two.

I heard of various sets of Yellow-billed Loon eggs that had been taken in this locality and near Point Hope, but when I came to run the reports down, I found that the eggs were usually collected by Eskimos, or that the collector *had seen* Yellow-billed Loons flying about the nesting ponds. The methods employed by the captains of whaling and other vessels, as well as some collectors, to secure rare Arctic eggs, has too often been to give a native some trinket to bring the eggs in. While natives are fairly accurate and observing, they are more interested in securing the reward than they are in obtaining dependable scientific facts. Hence I am reluctant to accept such evidence at full value. Then, too, many, probably nearly all, of the nesting records of the Yellow-billed Loon are from territory where the Common Loon has been known

to occur, so it seems to me that nothing short of the capture of the parent bird together with the set of eggs, by some responsible party, would constitute a dependable record.

There is another point also in this connection that may, perhaps, be emphasized here, and that is that the occurrence of many individuals in a region during the nesting season does not necessarily prove that the species breeds commonly there. During the spring of 1907, in the Sitkan district of southeastern Alaska, we found Northern Bald Eagles in abundance, as many as twenty birds being in sight at one time. Over two-thirds of these birds were adults, yet I was able to find only one pair of birds breeding, although many old, uninhabited nests were investigated. At St. Lawrence Island in Bering Sea, on June 25, 1913, Emperor Geese were found to be very numerous. Flocks of from seven to twenty were observed flying over the large lagoon on the south side of the island. We saw over one hundred birds, but none of those dissected showed signs of breeding, and no recent nests could be found. Along the whole coast of Alaska non-breeding water birds occur in numbers throughout the summer, in places far outside their breeding ranges.

Under these conditions it seems evident that something more than identification of a species is necessary to establish its status as a breeder in a locality.

The flight of the Yellow-billed Loon in migration was one of the most impressive sights of our Arctic trip. A dim speck low over the frozen tundra or glaring ice fields suddenly develops wings which beat rapidly with the rhythm and energy of a steam engine. The huge bill and neck seem to be extended slightly upwards, and the bird glides swiftly forward in a straight line with none of the undulating movements of the brant and eider ducks. The rapid "swish, swish," of the huge wings dies away in the Arctic silence, and the next moment one is gazing in the distance where a rapidly diminishing dark object seems to be boring a hole in the low clouds in the east. There was no variation in speed or direction, and the birds traveled at least forty miles an hour over a measured distance. Most of those secured were "through travellers" in full flight, and all were exceedingly fat. I weighed the fat that I clipped off of one skin, and found it to be a good two pounds. The bird weighed twelve pounds before skinning.

I believe that the spring route of the Yellow-billed Loon as suggested by Cooke is correct; at least our observations support his conclusions. The first definite data on Yellow-billed Loons were secured at Point Hope and Cape Lisburne, some two hundred miles north of Bering Strait, on the Alaska side. Here the Eskimo had cartridge or tool bags made of the necks of this species. These bags were of recent origin and could not well have been trade goods from farther north. Point Barrow seems to be the next point where the birds have been observed. Swinging wide from this point, they turn south-eastward along the Arctic coast, and head for the mouth of the Mackenzie River. Yellow-billed, or "King" Loons, as they are known locally, are reported to have been found by whalers in great numbers in a lagoon on the south end of Banks Land during the last of August and first of September.

One of the strange features of our experience with the Yellow-bill was our absolute failure to gain information as to the fall migration. The interval between July 24 and September 3, 1913, was spent between Point Barrow and Demarcation Point, Alaska. Numerous collecting excursions were made ashore while the ship was tied up to the ice, but no Yellow-bills were seen during this time. Our ship was "frozen in" about seven miles off Humphrey Point, Alaska, on September 3, 1913, and here again we failed to observe any large loon, although we especially watched for them among the waterfowl that were outward bound for Point Barrow. From our winter camp ashore we kept a continual watch for them, but observed none during the entire fall and winter. No Yellow-bills were seen during the next fall (1914) although observations were carried on until we reached Nome on September 19. Stops were made at Wainwright Inlet and Point Hope on the way down. A week was spent at Kotzebue Sound, but no sign of fall migration of the "King" Loon could be secured. In Siberia we also failed to find any sign of it during our collecting on the Chuckchi Peninsula, between June 1 and 22, 1913. Trips were made from the southern part of the Peninsula north to Cape Serdze during June and July, with collecting stops at John Howland, Providence and Plover bays, Emma Harbor, Indian or Chaplin Point and East Cape, without seeing any evidence of even the remains of the bird among the belongings of the Eskimo.

It seems probable that in southeastern Alaska the Yellow-billed Loon is rather more than a mere straggler, as would be inferred from Cooke's (loc. cit) mention of the Admiralty Island occurrence. While possibly his statement regarding this record may be considered as technically correct in viewing the May 25 observation as the only one strictly a spring record, still the capture of two specimens on Admiralty Island in May and August, 1911, respectively, and the sight of three others in the same general region during June of the same year, together with still others observed during June and November, 1910 (Swarth, Condor, vol. 13, 1911, p. 211) all tend to establish the fact that the coast of southeastern Alaska lies in the Yellow-billed Loon's regular line of travel. From personal experience with an individual apparently of this species, at Admiralty Island in the spring of 1907 (see Grinnell, Univ. Calif. Publ. Zool., vol. 5, 1909, p. 182), the writer believes that the species might occur there more regularly than is supposed, and still be overlooked.

In connection with the general problem of the migration of this species it is, perhaps, desirable to record here a specimen in the collection of the Museum of Vertebrate Zoology (no. 16694), an adult male, taken by F. Kleinschmidt at Teller (Port Clarence), Alaska, July 6, 1907.

The points brought out by our observations on the Yellow-billed Loon may be summarized as follows.

1. Corroboration in general of the spring migration route outlined tentatively by Cooke: From eastern Asia to Bering Strait, to Point Barrow, and to the Mackenzie River delta. The parts of skins seen in possession of natives at Point Hope and Cape Lisburne, Alaska (two hundred miles north of Bering Strait), and the hundreds of birds seen migrating eastward at Humphrey Point, Alaska (between Point Barrow and the Mackenzie River), in June and July, form supporting evidence.

2. Improbability that the species breeds on the Arctic coast of Alaska and Canada, which coast it traverses in migration. Collection and dissection of numerous specimens, and careful observation of living birds, are sufficient basis for this statement. Circumstances, as previously detailed, cast doubt in the writer's mind on most, or all, of the breeding records so far made from this region.

3. Our surprising failure to obtain any information regarding the fall migration. There seems to be little doubt that the Yellow-billed Loon does not leave its supposed breeding ground in the fall through the region we visited, which is evidently the highway only in the spring.

4. There seems reason to believe, from evidence as cited above, that the coast of southeastern Alaska may still be profitably scrutinized to yield information regarding the migratory movements of the yellow-billed Loon.

NOTES ON SOME MAINE BIRDS.

BY ARTHUR H. NORTON.

THE following notes refer to species of more or less unusual occurrence within the boundaries of the state of Maine together with records of two species new to the State list. One of the latter not having been previously recorded in the United States.

Stercorarius pomarinus. POMARINE JAEGER.— While not venturing to criticise the general statement, that the present species is probably the rarest of the three jaegers,[1] from local experience the statement comes as a surprise. On this coast, between Saco Bay and West Quoddy Head, the Pomarine Jaeger has been the only species found at all commonly. Of course jaegers are not common compared with gulls of the common species, yet almost any day in summer, spent at sea three or more miles beyond the bays, will usually show one or more Pomarine Jaegers, while the other species are seldom seen.

It frequently enters the broad bays, and is often to be found in the vicinity of the large tern colonies harrying the terns. The birds are well known to all fishermen and distinguished by an obscene name.

On the Maine coast they occur throughout the summer.

My extreme records are May 29 (1914) and September 22 (1913).

In late August and early September there are usually evidences of a migratory movement, as an increase of birds is noticed for a week or more.

[1] 1915. Cooke, Bull. 292, U. S. Dept. Agric., p. 7.

Larus hyperboreus. GLAUCOUS GULL.— The latest previous spring record of this Gull on the Maine coast appears to have been April 27, 1883,[1] a specimen taken at Peak's Island.

On June 3, 1915, a specimen in nearly adult winter plumage, with moult to summer plumage conspicuous, was taken near Richmond's Island, Me. The bird was with a flock of Herring Gulls.

With the latter, it came for fish dressings and in feeding seemed far more savage or voracious. While the Herring Gulls merely paused in their flight and snatched the floating matter from the surface, and continued on the wing, the Glaucous Gull mentioned pounced heavily down, into the water, seizing the food, and with wings raised in a belligerent manner, facing its companions, gulped the matter on the water, and then rose to seek more.

It was a barren bird and would probably have spent much of the season well south of its breeding range.

Larus leucopterus. ICELAND GULL.— On May 20, 1915, at the same place where the last species was taken, a female of the present species was taken. The bird which was not fully adult was slowly moulting from winter to summer plumage.

My earliest fall record is November 12 (1904) at Portland Harbor.

Larus minutus. LITTLE GULL.— A specimen of the Little Gull was taken about a mile southeast of Mosquito Island, St. George, Me., August 12, 1904. It is an adult male, in nuptial plumage, with slight traces of post nuptial moult showing in the head; primaries much worn.

The chagrin of having overlooked this bird's identity, and forgetting, through the inconvenience of moving, to examine it, is somewhat offset by the satisfaction of having personally taken so rare a specimen in my native town. This furnishes two records for the State.[2]

The bird was alone, hovering over a raft of decomposing seaweed that had lain some weeks on a shore and become filled with maggots (no doubt of the beach fly, *Cælopa frigida*) and then floated away. The bird had maggots in its stomach.

Sterna dougalli. ROSEATE TERN.— To the list of Maine specimens summarized in 1913,[3] may be added one more record. Mr. Everett Smith and I were at Bluff Island May 29, 1914, and saw and watched for some time three Roseate Terns. They were constantly chasing each other, high in the air, most of the time over the island, but occasionally flying out over the water considerably lower than when over the land. It was too early to have had eggs, as but one tern's egg was seen on the island on this day.

Hydrochelidon nigra surinamensis. BLACK TERN.— Though the

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[1] 1883. Brown, Bull. Nutt. Orn. Cl., VIII, 186. This is loosely credited to Knight in the recent Bull. 292, U. S. Dept. Agri., 24.

[2] 1910. Norton, Auk, XXVII: 447–450.

[3] 1913. Norton, Auk, XXX: 574.

Black Tern is probably a nearly regular fall migrant, it is seldom seen in numbers.

A remarkable flight was observed off Casco Bay, Cape Elizabeth and Saco Bay September 5, 1913. The boatman with whom I took passage this day, was a man very familiar with the appearance of sea birds, and he was positive that he had seen them two days earlier.

On the date above mentioned a large number of scattering individuals were seen on the ground known as West Cod Ledge, and from here to Bluff Island, a distance of fifteen miles. Besides these, one group of twelve and more were counted off Richmond's Island. Six and more were hovering over the surf on the north side of Bluff Island, and a flock of eleven were seen flying to sea as we entered Portland harbor on the return home, late in the afternoon.

The birds were usually congregated over the drifting rafts of decaying seaweed, floated from the shores, and at Bluff Island, they hovered feeding, where the surf was washing the edge of a bank of this seaweed stranded on the beach.

Several specimens collected at sea, had maggots in their stomachs, probably *Cælopa frigida*, which breeds on the beaches in the stranded and rotting seaweed.

A noteworthy feature of this flight was that it was offshore, few or none of the birds being observed at the ponds by the sea where they usually are seen.

Oceanites oceanicus. WILSON'S PETREL.— Wilson's Petrel has usually been cited as rare on this coast.

My experience indicates that it is common at least from May 28 to September 9, five or six miles offshore. During frequent excursions of five to twelve miles offshore the past fifteen years, this is the only species I have seen by day. It is a common occurrence to attract twenty to fifty of these birds about a boat at anchor or slowly drifting, in an hour's time.

If there is any breeze the birds are found flying to windward, and when they find it desirable to work over a small space, after once passing over it, they swing away in a large circle, and again come up from the leeward. Birds showing peculiar conditions of moult, can thus be recognized, and I have watched them for long periods of time, returning again and again in the same manner. Thus a flock is composed of birds, constantly going and coming, and while fifty are in sight, probably nearly as many more are at hand, preparing to return. On these occasions they are rather silent, never noisy, but a low peeping note is often given, very similar to the note of a contented young tame duckling (*Anas platyrhynchos domestica*). Rarely I have heard them chattering, gutturally in a weak voice, audible but a very short distance, in fact, neither note is audible (to me) for more than a hundred feet in calm weather.

One of the birds which I examined alive and unhurt, was unable to stand upon its stilt-like legs, but rested on the tips of its toes and heel, *i. e.* tibio-tarsal joint. I have several times seen them dive to the depth of about a foot for sinking food.

Pelecanus occidentalis. BROWN PELICAN.— In 1901 Homer R. Dill reported "*A Brown Pelican*" [1] (italics mine) captured alive at Bar Harbor in the Autumn of 1900.

Dill's photograph which appears as a cover design of the same number of the journal, is all that can be desired in showing the gular pouch extending about half way down the neck, and the lower jaw entirely bare.

This paper was followed by a statement that the bird "Was originally brought from South America on board a ship and escaped from Castine." [2]

The matter rested there until 1908 [3] when Knight said, "The Brown Pelican recorded by Dill in J. M. O. S. proves on investigation not to be a Brown Pelican at all.

It is a South American species of Pelican being one of three kept as pets by a resident of Castine. As such it has no right to be called a bird of Maine."

He further says under the caption *Pelicanus occidentalis* "neither is it entitled to the name there given to it." [4]

The only name used by Dill was "Brown Pelican"!

The bird was mounted, and is in the state museum at Augusta, where the curator, Mr. Thomas A. James, gave me opportunity to examine it, though we had no specimens for comparison. The primaries had been clipped near the tips giving support to the theory of its confinement, though rendering the wing measurement useless. The culmen measures 275 mm. (about 10.84 inches). The coloring is, above obscure brownish, below dirty whitish, the pouch showing no trace of reddish, the neck plain brownish.

The bird is evidently immature. If not of the present species, it must belong to an unknown one, as it is well within the dimensions of *P. occidentalis*, and below those of *P. californicus*, or *P. molinæ*, the only others known from South America, nor does it agree with either of the other eight pelicans characterized by Dubois.[5]

[After the above was written an article has appeared in 'Bird-Lore' [6] by Mr. John B. May, with a photograph of two Brown Pelicans taken at Castine. The birds, he states, were brought from Florida and released. Ed.]

Chaulelasmus streperus. GADWALL.— So far the Gadwall has proved to be one of the rarest Ducks known to visit Maine.

Mr. N. C. Brown, recorded two taken at Scarborough, April 29, 1879.[7] The late Alpheus G. Rogers [8] of Portland wrote in his shooting journal

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[1] 1901. Dill, Journ. Me. Orn. Soc., III: 15.
[2] 1901. [Swain], ibid., p. 18.
[3] 1908. Knight, Birds of Maine, 76, footnote.
[4] 1908. Knight, Birds of Maine, 647–648.
[5] 1907. Dubois, Genera Avium, pt. 7.
[6] Bird-Lore, July–August, 1916, p. 247.
[7] 1882. Brown, Abstr. Proc. Portland Soc. N. H., II., 2.
[8] 1903. Rogers, Third Shooting Journal.

in the fall of 1903, that three were shot at Cape Elizabeth, a few years ago, which he saw. In the fall of 1903 one was shot at Falmouth by James (not John) Whitney.[1]

In the fall of 1904 a remarkable visitation of this species to Maine took place. At Merrymeeting Bay, Frank T. Noble shot a female October 27. He stated, "On the 28th and 29th they came in fairly good-sized flocks, fifteen or more being repeatedly seen together." [2]

Seven were shot in Scarborough, about the same time or early in November. Two of the seven, two adult males, were taken by E. B. Pillsbury, November 4. One of the seven was plucked, but the others were mounted and scattered. November 7, a male was shot in Windham, on the Presumpscot River, and is preserved in the writer's collection.

Marila americana. REDHEAD.— The Redhead, though of frequent occurrence and formerly breeding, has seldom been observed in spring. It is therefore worthy of note that a pair of these birds were shot at Scarborough March 27, 1905.

Marila valisineria. CANVAS-BACK.— The Canvas-back has been considered one of the rarest of Maine ducks; the recent increase of unpublished records would seem to indicate that it has visited the state with greater frequency the past dozen years. Yet the bird is sufficiently rare to make the citation of records desirable, especially so, since the last summary [3] is incomplete and leaves an erroneous impression.

E. A. Samuels wrote, "I once killed one in Lake Umbagog." [4]

Mr. N. C. Brown recorded the fact that two were killed near the mouth of Portland harbor in the fall of 1874,[5] and that he heard of three more.

Of this same occurrence "Roamer" [Everett Smith] reported "one, October, 1874," [6] thus losing sight of one specimen. The latter communication has been taken as the source of the 1874 record by Knight in both of his works.

In his 'Birds of Maine' Mr. Smith reported a pair, male and female, taken at Great Pond, Cape Elizabeth, November, 1880.[7] Curiously, in citing this record Dr. Knight omitted one of these, recording but one.

Four were taken at Nahumkeag Pond, Pittston, "about the eighth of October, 1896." [8] by Charles Thurber, two of which were preserved.

These are the same birds reported in 'Bulletin 3, University of Maine', page 158, as taken in 1895. Since I have a vivid impression that Dr. Knight told me he had been wrongly informed of the date as given in that

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[1] 1908. Knight, Birds of Maine, 85.
[2] 1905. Noble, Journ. Me. Orn. Soc., XII, 12.
[3] 1908. Knight, Birds of Maine, 97.
[4] 1870. Samuels, Bds. N. Eng., 508. Earlier editions?
[5] 1874? Brown, Am. Sportsman. [Mr. Brown's letter was written in December, 1874, I cannot cite exact date of publication.
[6] 1874. Roamer [Everett Smith], Forest & Stream, III: 324.
[7] 1883. Smith, Forest & Stream, XX: 184.
[8] 1913. Thurber, in Epist., April 21 (1913).

work, I have no hesitancy in substituting the date given me by Mr. Thurber.

In 1902 six were shot from a flock of eight at Cape Elizabeth and of these Knight records two.[1] Thus Knight has summarized eight [2] Canvas-backs instead of fifteen.

In 1907 one was shot October 21, one October 25, one October 26, and one October 31 (or four in all) at Cape Elizabeth.

In 1912 one was taken October 30, and two November 2, at Cape Elizabeth. In 1913, seven were shot at the same place October 14.

In 1914 an adult male was taken in Falmouth, October 31, now in the collection of the Portland Society of Natural History, and in 1915 another adult male was shot at the same place November 14, and is in the collection of W. H. Rich.

Chen hyperboreus hyperboreus. SNOW GOOSE.— Of the Snow Geese shot in Maine and identified, all of the fall specimens, eight[3] in number, have been of the present form.

To this number should now be added five specimens, shot at Bowery Beach, Cape Elizabeth, Me., October 2, 1915, by F. H. Darling, who said the birds were very tame.

Five wings, probably representing three individuals, were secured, showing the birds to have been of this form. Mr. Darling said the wings saved were those of the ganders, indicating that they were the larger ones. The wings are preserved in the collection of the Portland Society of Natural History.

Macrorhamphus griseus scolopaceus.[4] LONG-BILLED DOWITCHER.— A specimen was taken in Scarborough, September, 1913, a female in fresh winter plumage.

Charadrius dominicus fulvus. PACIFIC GOLDEN PLOVER.— September 11, 1911, Mr. E. B. Pillsbury shot at Scarborough an adult female Pacific Plover. I am indebted once more to Mr. Pillsbury's keenness in the observations of birds, and detection of unusual characteristics. The bird had about half completed the postnuptial moult. Mr. Pillsbury observed that its note differed from that of the Golden Plover. The specimen has been examined by Dr. Jonathan Dwight, who concurs in my identification.

Catharista uburu. BLACK VULTURE.— On July 11, 1915, my brother, Mr. Ralph Norton, observed in Scarborough, Me., a very large and very dark bird resting motionless on a pole by a roadside: as he passed by it, it thrust up a dark bare head. This description which he gave me leaves little if any doubt of the bird's identity. This, so far as I am aware, is the first Black Vulture to be detected in the vicinity of Portland.

This seems an opportune time to undertake the task of revising the confused Maine records of this bird.

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[1] 1908. Knight, Birds of Maine, 97.
[2] 1908. Knight, l. c.
[3] 1913. Norton, Auk, XXX, 575.
[4] 1913. Norton, Auk, XXX: 576.

It was apparently first recorded by Mr. Geo. A. Boardman in 1869,[1] a specimen taken near Calais. Though mentioned as the first to come to his notice the exact date is not given.

In 1875[2] another was recorded by Mr. Boardman at Calais (original record not seen).

In 1893,[3] Mr. Wm. Dutcher (on the statement of Mr. Boardman) recorded a third from Calais. Mr. Dutcher quoted Boardman as writing that it was the sixth he had known from the vicinity. Since Mr. Boardman included the "St. Croix Valley," Grand Manan, and adjacent islands in his vicinity, there can be little or no doubt that the six included the Campobello, Grand Manan and other New Brunswick records.[4]

September 25, 1897,[5] Wm. L. Powers shot an adult male in Whitefield, On August 26, 1904,[6] an adult male was shot at Lubec, and secured by Clarence H. Clark.

August 20, 1901,[7] a specimen was taken alive near Dover, and one[8] has been recorded as shot at Eliot (date not given).

July 6, 1909,[9] an adult male was taken at Monhegan Island, and passed into the possession of Judge Charles F. Jenney.

Tyrannus melancholicus satrapa. LICHTENSTEIN'S KINGBIRD.—On October 31, 1915, Mr. George Oliver observed this stranger near his house in Scarborough, and secured it for the collection of the Portland Society of Natural History. Mr. Oliver said that it was seen the day before it was taken, and was thought to have been a shrike. Upon reaching the identification given, it was sent to the United States National Museum, where it was confirmed by Mr. H. C. Oberholser, and Mr. Robert Ridgway. The bird was a young male, in very good condition. The digestive organs were sent to Mr. W. L. McAtee, of the U. S. Biological Survey, who gave the following report, with permission to use it in the present connection.

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[1] 1869. Boardman, Am. Nat., III, p. 498.

[2] 1875. Boardman, Forest & Stream, III: 375. See Bailey, 1881, Forest & Stream, Bird Notes, 30.

[3] 1893. Dutcher, Auk, X: 82.

[4] In 1897 (Bull. 3, Univ. Me., p. 58) Ora W. Knight attempted a compilation of the Maine records of the Vultures committing several serious errors. In the work cited, Mr. Smith's report of *Cathartes aura septentrionalis* (Forest & Stream, 1883, XX: 285) was transferred to the present species. In Birds of Maine, 1908, p. 213, the report is dropped, with the erroneous statement that Mr. Smith had reported the wrong species. (Cf. Auk, XXVIII, 263–264) and the Campobello, N. B., specimen of the present species, recorded by Boardman, 1879, F. & S., XIII: 605, and Deane, 1880, B. N. O. C., V: 63 and Smith, 1883, F. & S., XX: 26, was reported as an Eastport specimen. This error also reappears in Birds of Maine, 1908, page 215.

[5] 1897. [Powers], Maine Sportsman, Nov., 1897, 8.

[6] 1905. Clark, Journ. Me. Orn. Soc., VII: 23.

[7] 1908. Knight, Birds of Maine, 215.

[8] 1908. Knight, W. L. Fernald, Birds of Maine, 215.

[9] 1909. Maynard, Records of Walks and Talks, with Nature, II: 116–122, also Journal Me. Orn. Soc., XI: 121.

"Remains of at least 16 *Muscidæ*, part of them *Pallenia rudis*, and part of a metallic kind, probably *Phormia*, 96%; 1 *Scatophaga furcata* and 1 *Syrphus* sp. 4%; bits of unidentified vegetable matter tr. The intestines contained finely ground material of the same character."

This occurrence adds a new form to the North American catalogue, its range being "Western and Southern Mexico from states of Sinaloa and Southern Vera Cruz, southward through Central America, Colombia, Venezuela and Guiana to Trinidad, Tobago, and lower Amazon Valley." [1]

It should be recalled in connection with this waif that two very intense tropical cyclones visited the United States, one in August, the other in September, 1915.[2]

Regulus calendula calendula. RUBY-CROWNED KINGLET.—On January 13, 1916, Mr. W. H. Rich brought me an adult male Ruby-crowned Kinglet which had been found dead in a greenhouse near his residence in Falmouth. As the winter had been very mild and the greenhouse frequently opened for ventilation, it could not have been confined during the winter, nor had it been seen by the owners, on their daily visits. The bird was slightly putrid, the eyes and feet much dried, yet it could not have been dead for more than a week.

This species migrates through this region in October, the latest instance of its occurrence that I have found being Phillips, October 25, 1911.[3]

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[1] 1907. Ridgway, Bull. 50, U. S. N. M., pt. 4, 702.

[2] Cf. Mo. Weather Rev. Aug. 1915 and Sept. 1915: also Brooks, Science, N. S. XLIII: 214, 215, (Feb. 11, 1916).

[3] 1915. Cooke, Bird-Lore, XVII: 124.

NOTES ON SOME SPRING BIRDS OF LA PLATA.

BY ROLAND F. HUSSEY.

FOR about six months beginning July 22, 1914, the writer had his residence in the Observatorio Astronómico at La Plata, Argentina, about thirty miles southeast of Buenos Aires city. During the first few weeks of this period field work was made very difficult by adverse weather conditions: the year 1914 was abnormally rainy throughout Argentina, and the level country about La Plata was nearly impassable through the early spring months. But toward the middle of September conditions improved greatly, and field work soon became comparatively easy.

Observations were made in three general regions about the city of La Plata. The first includes the Bosque park and the observatory grounds — both within the city limits — and a little of the surrounding region. The Bosque is a large artificial woodland set about an artificial lake. The trees here are chiefly the eucalyptus; also there are some willows, poplars, sycamores, etc. Within the Bosque is a zoological garden, to which many small birds are attracted by the abundance of food. Also, the famous La Plata Museum is located in the Bosque.

The observatory grounds are much more open, and several species of ground birds frequent them, notably the Cowbird, the Ovenbird (*Furnarius*), the Chingolo Sparrow, the Ovejera (*Machetornis*), the Guira Cuckoo, and others. There are in all about eighteen buildings on these grounds, several of which have steeply sloping roofs with wide eaves; and here the common swallow breeds quite frequently. The observatory grounds are shut in on three sides by the eucalyptus forest of the Bosque; to the north they are open and a clear view is obtained across the level fields to the river Plate, about five miles distant.

The second of the three general regions mentioned above proved the least profitable. It includes a small pond of open water and an arroyo grown up with rushes, and is surrounded by very wet meadows. It is just off the railroad track about four miles south of the city.

The third region, by far the most important, includes a strip of land along the great municipal sewer to the northeast of La Plata; it is made up of several distinct subregions.

The first subregion is about four miles in length: a vast marsh all grown up with ten-foot grasses, but without other trees or bushes than a few slender willow stalks. The great brick cloaca is entirely above ground through this region, and gives an excellent place of vantage from which an extensive vista over the marsh is secured. Probably there are some areas of open water within the region, as several species of ducks were seen to rise from and settle into the more distant parts.

For the most part the water in this marsh is shallow — not more than eight inches deep in most places, at least under normal conditions. But the river Plate is greatly affected by the winds. A two-days' "pampero" from the south may back up the water until it stands ten feet or more above its usual level, while a wind from the north may produce just the opposite result; and the whole marsh area is more or less affected by the water level in the river, especially during these times of abnormally high or low water. Toward the end of December, as the dry season approached and there were no strong up-stream winds, a large part of this marsh dried up; this produced some change in the bird life, of which the most noticeable feature was the withdrawal of the Snail Hawk (*Rostrhamus sociabilis*).

The second subregion is about two miles long. Here the land is higher, and trees and thorny bushes begin to make their appearance. A large part of this region is given over to small gardens and to pasture. A tramway runs from here to the port of La Plata, where connections are made with a line from the city itself.

The third region extends on about two miles, to the river Plate. This is the most diversified of all those in which work was done. Small gardens, diked about to guard against high water, alternate with bits of open marsh and fragments of the original swampy forest, and with dense groves of poplar and willow and other quick-growing trees, planted for future use as firewood. Wood-cutting is always going on here; and so the region has been given the name Los Talas — apparently with absolute disregard for the rules of Spanish grammar.

The original tree of the swampy forest (*Erythrina crista-galli*) puts forth in December large masses of dark red blossoms, around which numbers of hummingbirds are seen. But this tree has largely been cut off, and is now confined chiefly to a strip along the shore of the river, where the land is cut up into many little islands by narrow canals and ditches. Finally, along the shore of the river itself, is a narrow strip of sandy beach.

Almost no collecting was done by the writer during his stay in La Plata; therefore no species have been included in the following list regarding whose identification there was the slightest doubt: to phrase it differently, none of the forms listed below was regarded as hypothetical. So this list includes but a few of the species whose range includes La Plata.

The nomenclature used here is for the most part that given by Dabbene in the 'Catálogo' to his 'Ornitología Argentina' (1910)[1]; in a few cases other names, given by him in more recent publications, have been employed.

1. **Zenaida auriculata** (Des Murs). "TORCASA."— This dove is very common in comparatively open country where there are scattering clumps of trees or bushes; I never found it in heavily wooded districts or in the Bosque — in fact, I never saw it at all near the city. In the spring and summer it was always seen singly or in pairs, but I was told that later it gathers into large flocks. The song is often heard; the notes have a sweet and sorrowful quality which gives something of the effect of our Mourning Dove's song.

A nest found December 22 contained one bird not yet completely feathered out. The nest was a crude structure of sticks, in a thorny bush about four feet from the ground, and was at the edge of a garden plot near Los Talas.

2. **Columbula picui** (Temm.). "TORCASITA," "PICUI."— This small dove was much more frequently seen than the preceding species — not because it was more plentiful, since the reverse is the case, but because it comes around the edge of the town and was quite common in the Bosque. It was usually seen in pairs, though in the winter and the early spring small parties of about fifteen birds were not uncommon. The song of this bird was quite familiar; it is not so pleasing as the song of the preceding species.

3. **Aramides ypecaha** (Vieill.). "GALLINETE."— The powerful cry of alarm and the shrieking chorus of this rail were familiar to me long before I learned the identity of their author.

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[1] An. Mus. Nac. Buenos Aires, ser. 3, v. xi.

On one occasion I was so fortunate as to witness one of the strange performances characteristic of this bird. I had concealed myself near an open place in the marsh, hoping to see some of its rarer bird-life, when I heard a loud triple call note, which was answered by other birds. In a very short time about half a dozen ypecahas appeared in the open area; and there, with wings raised and trembling and beaks vertical they rushed about madly, screaming at the tops of their voices. This lasted for perhaps a minute, when all at once one bird seemed to discover my presence and gave the loud alarm cry, upon which all the birds fled.

This was the only time that I saw the ypecaha in its own haunts; but on another occasion I saw one perched upon a fence post at the edge of the marsh, and was able to approach quite close before he showed the least sign of fear. This seemed quite remarkable to me, since the ypecaha, like others of his family, is usually very wary and keeps well concealed.

4. **Sterna superciliaris** Vieill.— This little tern was fairly common about the port of La Plata during the winter and early spring. A larger tern (*S. hirundinacea*?) was also seen occasionally.

5. **Larus maculipennis** Licht. "GAVIOTA COMÚN" (COMMON GULL).— The spot-winged gull was seen but seldom; usually in flocks of about twenty individuals. On one day only, December 22, did I see any number of gulls. On that day they began to come in sight about ten o'clock in the morning, flying up-stream in small flocks of about a dozen birds, the flocks following each other at intervals of about three minutes, and the gulls continued to pass me for more than an hour.

It has seemed very strange to me that there were so few gulls about the beaches near La Plata, particularly since so much fishing was done and so much refuse was about; and these gulls are particularly noted as scavengers. But although caracaras were occasionally found there, the gulls were seldom seen.

6. **Larus cirrhocephalus** Vieill.— While in some plumages this gull and the preceding resemble each other closely, during the breeding season they are distinct. I saw this gull several times, always in company with the other, and all my records were made during the early part of October.

7. **Larus dominicanus** Licht.— This large gull was seen only a few times, during the winter months, and always singly or in pairs.

8. **Belonopterus cayennensis** (Gm.). "TÉRU-TÉRU."— No one can live long in the Argentine without knowing the Teru; and should he go abroad into the camp the Teru will soon be aware of his presence. The Terus are usually seen in pairs; and each pair has its own little domain to which they are much attached, and they can usually be found there. Toward all intruders the Teru is very bitter; he flies closely about them, shrieking loudly the two-syllabled cry of which the common name is an imitation. I have known them to fly so close as to brush me with their wings.

Being such a noisy bird and so suspicious of strangers, the Teru is considered by many an excellent guardian and as valuable to a household as a watchdog; I myself know of at least two cases where these lapwings are

kept as guardians. Besides, the Teru is an attractive bird, and is often kept in private gardens on that account.

9. **Gallinago paraguayæ** (Vieill.). PARAGUAY SNIPE.— Frequently flushed from wet meadows and marsh-land where the grass was fairly short. In the small arroyo south of La Plata, mentioned in the introduction, this bird was very common, notwithstanding the nearness of human habitations and the frequent passing of hunters. In their general appearance and their habits this snipe seemed to resemble *G. delicata* of North America.

10. **Aramus scolopaceus** (Gm.). "CARÁU"— The Courlan was very plentiful in the marshes all about La Plata and their voices were among the most familiar sounds of the swamp. They were very suspicious and wary toward a man on foot, and would not allow an approach to within a hundred and fifty yards without flying; yet I frequently noted that they took no notice of passing trams though within fifty yards of the track. I never saw these birds anywhere except in the open marsh; but I was told that they perch occasionally in trees.

11. **Butorides striata** (Linn.).— This little blue heron was tolerably common at La Plata, where it seemed to be solitary in its habits. I never saw it anywhere except in the wooded regions at Los Talas — save when in flight — and it seemed very much attached to its particular haunts, and could be found there day after day.

12. **Ardetta involucris** (Vieill.).— I believe this heron to be tolerably common in the open marsh where the grass grows tall, despite the fact that I have very few records of it. So protective is its coloration that its detection is almost impossible even though the spot where it settles is marked carefully. The bird is about the size of the Least Bittern (*Ixobrychus exilis*), with the coloration of the North American Bittern (*Botaurus lentiginosus*), and like this latter bird, when trying to escape detection it stands motionless among the reeds with bill pointed vertical, and it always keeps its breast toward the invader. Only once was I able to find this little heron after it had dropped into the grass.

I was told that the common name for this bird is "Bruja" (witch), but the name does not seem to be well known. What its significance is I do not know.

13. **Metopiana peposaca** (Vieill.). ROSY-BILLED DUCK.— This was the only member of the family that I saw at all frequently. I always found it in flocks of about half a dozen birds.

14. **Querquedula cyanoptera** (Vieill.). CINNAMON TEAL.— Seen in all but four times, and only during the early spring.

15. **Phalacrocorax vigua** (Vieill.).— I found this cormorant several times; it was always in pairs, whether swimming or flying. I never saw it perched.

16. **Polyborus tharus** (Mol.). "CARANCHO." The Caracara was seldom seen. On two or three occasions I found a pair perched in the trees along the shore of the river while the nets were being hauled in by the fishermen. Except for these, the only ones seen were a pair noted several

times near Conchitas, about midway between La Plata and Buenos Aires.

17. **Circus cinereus** (Vieill.). CINEREUS HARRIER.— Seen only twice, both times by a muddy stream south of the city. They seemed quite sluggish in their movements and quite unlike the next species.

18. **Circus maculosus** (Vieill.).— Larger and darker than the preceding and much more active in its habits. It seemed much more common during the cooler months than later in the year.

19. **Rostrhamus sociabilis** (Vieill.). SNAIL HAWK.— By far the most abundant large bird at La Plata. I first saw them in August flying in great flocks over the marshes; at times their flight was very suggestive of a *Buteo*, and at other times they swept low over the grass like a harrier, or perched upon slender willow stalks which bent nearly double under their weight.

From then until December they were abundant; but above all they were snail hawks, and as the summer weather approached and the marsh dried up, the snails became more and more difficult to find, and the hawks began to disappear. Finally, on January 16 in a whole day's tramp I did not see a single *Rostrhamus*; while beneath nearly every post and willow stalk was a pile of empty snail shells, evidences of the bird's previous residence.

20. **Parabuteo unicinctus unicinctus** (Temm.).— This hawk was seen but twice. Its actions recalled a harrier, but its flight was more sluggish even than that of *Circus cinereus*.

21. **Nyctalops accipitrinus cassini** (Brewer). SHORT-EARED OWL.— Frequently seen flying low over the higher ground at the edge of the marsh, especially where the grass is fairly short. It seems to fly most about twilight, both in the morning and evening, yet I have also seen it near noon in brightest sunlight. It is not at all shy, and did not seem to note my approach with any show of fear. I have never heard other notes from it than a loud hooting at twilight.

22. **Tyto flammea perlata** (Licht.). "LECHUZA."— The Barn Owl is resident about the city of La Plata, and though not very numerous, is well known. Its common note is a hissing scream like the sound of escaping steam; on one occasion I heard the cry which Bendire, speaking of *T. pratincola*, described as "a feeble, querulous note like 'quäek-quäek' or 'äek-äek.'"

23. **Speotyto cunicularia cunicularia** (Mol.).— The Burrowing Owl does not seem to be very common about La Plata. I saw a few in an open field south of the city, but no others except when on a trip to Córdoba.

24. **Ceryle amazona** (Lath.). "MARTÍN PESCADOR."— Once when I was walking along one of the canals in the littoral forest at Los Talas, a rattling call struck my ear, and on tracing it to its author I found this kingfisher. The only other time that I saw it was with several of the next species.

25. **Ceryle americana** (Gm.). "MARTÍN PESCADOR."— This little Kingfisher met with only at the Estancia Pereira, about midway between La Plata and Buenos Aires. A small stream has been dammed to form a

little lake in the midst of an artificial woodland, and here this little kingfisher was quite common in January. A few of its larger cousins, *C. amazona*, were seen at the same time.

26. **Chordeiles virginianus** (Gm.).— The Nighthawk was heard one evening about sunset above the observatory, and I was not long in discovering the two birds. Several days later, January 9, I saw two nighthawks again, possibly the same birds.

27. **Chlorostilbon aureoventris aureoventris** (Lafr. et Orb.). "PICAFLOR."— These Red-billed Hummingbirds were very common both in the Bosque and at Los Talas, first appearing in numbers late in August. They occasionally flew into the buildings at the observatory, but were quick to escape. On one occasion, however, two birds flew into a room through an open door and were unable to find their way out. One flew against the window screens; I let him escape. The other seemed to have lost all sense of direction. He was buzzing about the ceiling, and soon was so thickly covered with cobwebs that he actually could not move his wings, when he fell to the floor. His bill was wrapped around with webs so that he could not open it, his wings and tail were thickly covered, and his feet were all tangled up. I picked him up and proceeded to clean off the webs — a twenty-minute task. When I had finished the bird seemed nearly exhausted, so I dipped my finger in water and held the adhering drop close to his bill. He drank eagerly, running his tongue in and out through the drop, which disappeared very rapidly. A second and a third drop of water followed the first; then I took the bird outside and released him.

The Red-billed Hummer has a rather monotonous song which he delivers while perched: a few quick chirps, followed by five or six squeaky trills in quick succession.

28. **Coccyzus melanocoryphus** Vieill.— The Common Cuckoo was tolerably common in thick groves of trees, and its voice was often heard. It resembles the North American cuckoos more or less, in habits and in notes.

29. **Guira guira** (Gm.). "URRACA" (MAGPIE).— In voice, in appearance, and in habits is this long-tailed Cuckoo unpleasant. And of all the birds about the houses at the edge of town, the Urraca is the most in evidence. Its notes may be heard at all hours of the day: a series of two-syllabled whistles, rather clear and high-pitched at first, but becoming lower and hoarser as the song progresses.

The Urraca seems never to have mastered the art of alighting on a wire or other slender perch. Invariably the bird approaches rapidly and strikes the perch forcibly; he does not drop the tail to check his speed, but carries it straight out behind him. The effect of this is that as the bird strikes his perch the momentum of the tail seems to drive him on, and it is only after a struggle that he is able to maintain his footing.

The Urraca is quite at home on the ground; in fact I never saw him feed elsewhere. At night the birds roost in small companies in the eucalypti.

30. **Dendrocopus mixtus** (Bodd.).— This little woodpecker, the only

one which I saw at La Plata, is rather rare and is confined to the swampy woods along the river.

31. **Furnarius rufus rufus** (Gm.). "HORNERO."— The Ovenbird is one of the most common birds in the region about La Plata wherever there is a support for its nest, and its huge mud oven is a very familiar sight when travelling through the country. The oven is usually placed high and in a commanding position, but not invariably. One of the most unusual nest sites I have ever seen was adopted by a pair of these birds: there is a large copy of the Venus of Melos on a large pedestal in a stream about midway between La Plata and Buenos Aires, and a pair of Horneros built their oven between the feet of the goddess!

32. **Phlœocryptes melanops** (Vieill.).— A tiny bird, yet not hard to find. It is one of the most common birds in the rushes, where its curious woody creaks and tapping notes are most familiar sounds. The bird is possessed of a great deal of curiosity.

33. **Synallaxis albescens albescens** (Temm.).— Several birds either of this species or of *S. spixi*, possibly of both, were rather frequently met with at Los Talas. Each pair seemed much attached to a particular part of the woods, and could usually be found there. They kept well concealed in dense bushes for the most part, where they were difficult to locate despite their loud persistent song. A nest which I saw one of these birds enter was very large, of thorny sticks in a thorny bush, about four feet from the ground, and had a very narrow and crooked passage leading through the thick front wall to the nest proper. It contained no eggs at the time.

34. **Cranioleuca maluroides** (Orb. et Lafr.).— The harsh cackling notes of this bird were not infrequently heard in the marsh, but I was only once able to catch the bird in the act of singing.

35. **Anumbius anumbi** (Vieill.). "LEÑATERO."— The common name of this bird, which may be translated "wood-gatherer," seems particularly appropriate when its nest is seen. These immense stick nests may be found wherever there is suitable support, yet the bird prefers open situations and above all delights in building its home in the top of a slender poplar. Only once did I find a nest in a eucalyptus, and once, on July 25, I found a pair of the Leñateros starting a nest among the lower branches of an ombú.

The nest is not always built in trees. In November I found a nest under construction within and around the lattice-work of a semaphore tower beside a railroad. I watched this construction with great interest. First the nest cavity proper was outlined with rather small sticks, then its wall was somewhat thickened before the construction of the passage-way was begun. The wall of the passage way was extended little by little from the original nucleus of the structure; and when it had reached a length of about ten inches the birds turned their attention to covering the entire outside of the structure with a thick mat of sticks. When the whole had reached about a foot and a half in length and about twelve inches in diameter, it began to interfere with the proper working of the semaphores, and was torn down.

But as far as unusual situations are concerned, the prize goes to a pair of Leñateros that built their nest directly upon a trolley wire where a guy wire gave the necessary support; and they seemed utterly unconcerned at the regular passing of the trams below them. I could not see why the nest did not fall from its position; as far as I could tell it was not secured to the wires in any way, but seemed merely to be laid upon them. I finally came to the conclusion that the mere weight of the nest was probably what gave it its stability.

The Leñatero is very plentiful, especially about the edge of the town, and his unpretentious trilling song is heard all day long, in the cooler months as well as in the summer. I rarely saw it perch upon fences, and scarcely more often in trees. It feeds entirely on the ground, and its flight seems feeble.

36. **Thryolegus curvirostris** (Gould).— Another bird of the marsh, seldom seen in the middle of the day, though its rattling, jarring notes may be heard at any time. Toward evening it comes to the top of the reeds to give its peculiar song.

37. **Phacellodomus striaticollis** (Orb. et Lafr.).— This loud-voiced bird is quite common beside the canals and ditches, particularly where there are scattered bushes. It does not seem very shy.

About the middle of October I had an opportunity to watch a pair of these birds building a nest, in a fork of a young tree about eight feet above the water in a canal. The birds did not work continuously at building; at about ten minute intervals they appeared with sticks and twigs, then worked for about five minutes, after which they rested again. During these brief working spells one bird stayed at the nest and put into place the material which the other brought. At intervals one bird or the other gave its peculiar song, the following description of which is taken from my note-book:

"The Reed-bird's song began with a few chuckling notes, followed abruptly by a series of shrill penetrating shrieks, high-pitched at first, but each a little lower than the one preceding it. The 'song' continued about eight seconds, then stopped abruptly. Sometimes the two birds united in a shrieking duet, as do the Ovenbirds and other familiar species."

While not at work upon the nest the birds kept out of sight in the rushes at the side of the canal. Unfortunately this nest was destroyed before it was completed, and the birds left the place.

38. **Tænioptera dominicana** (Vieill.).— These black-crowned tyrants were not seen often, probably because very little time was spent in working the dry barren regions to which they are partial.

39. **Fluvicola albiventer** (Spix).— The contrasting areas of black and white on this bird make him very conspicuous. He is quite frequently seen in the marshes and along the banks of the canals.

I was surprised to read that Hudson considered this a shy bird, and rather difficult to see. On the contrary, I often saw it perched conspicuously on low branches and on reeds, close to the water, from where it made

sallies for passing insects in true flycatcher fashion, often coming quite close to me. And I have seen them pursuing each other about, when they passed within a few feet of me, heedless of my presence.

40. **Sisopygis icterophrys** (Vieill.).— I first saw this pretty tyrant bird in the observatory grounds, on August 21; for about a month I did not see it again, then it became quite common where the open country was broken by a few trees or bushes. It is a quiet bird, with many of the habits of the true flycatchers.

41. **Lichenops perspicillatus** Gm. "PICO DE PLATA" (SILVER-BILL).— This remarkable tyrant bird is common in marshy regions; it is unique in many ways. The sexes differ not only in color, but structurally and in habits. Both feed on the ground, but the male also gets a part of his food on the wing. All the males seem to possess the habit of shooting up vertically to a considerable height, then dropping back suddenly to their perches; but the performance differs somewhat in different birds. One bird may turn a somersault at the height of his climb, while another may drop back to within a few feet of the perch before executing a lightning-like flip, and I saw one or two birds which did not turn over at all, though I watched them closely for some time. Some birds utter a shrill cry during the performance, others are entirely silent. All seemed to move their wings so rapidly as to produce a humming sound, which varies in intensity from a barely audible whisper to a deep drumming sound easily audible a hundred yards away.

42. **Machetornis rixosa rixosa** (Vieill.).— This tyrant bird is colored in a way which is very suggestive of many species of *Tyrannus*; but its habits are entirely different. It lives on the ground, and is most often seen about the heads of the domestic animals with the cowbirds, and it is due to this fact that they have been given the common name "Ovejera" (shepherd).

43. **Myiosympotes flaviventris** (Orb. et Lafr.).— This little tyrant is one of the most common of the family at La Plata, being found wherever there are scattering bushes or where the weeds grow tall. There is little in its habits to suggest a tyrant bird; rather it suggests a small Vireo, though perhaps it is more energetic in its movements than those birds; and it has a rather formal little song of six or seven notes which it delivers in a jerky manner.

44. **Serpophaga subcristata** (Vieill.).— A small tyrant bird whose appearance and habits suggest a *Polioptila*. It was quite common in the bushes about the observatory, and also at Los Talas. While it was first seen in July, it was most common from September on.

45. **Serpophaga nigricans** (Vieill.).— Much less often seen than the preceding, and only at Los Talas, where it was flitting restlessly along the canals, snatching its food in the air.

46. **Cyanotis rubrigaster** (Vieill.). The "Siete colores" (Seven colors) is one of the most beautiful birds I have ever seen. While he is most at home in the tall marsh grass, he is often found elsewhere during

migration, and on August 11 I found a pair in a flower-bed in the Bosque. As Hudson has said, they are very inquisitive, and if a person approaches their reed-bed they "come out to meet him, uttering their silvery gurgling notes." They are quite plentiful in the great marsh northeast of the city, and I found them there from September 2 until late in January.

47. **Elainea albiceps albiceps** (Orb. et Lafr.).— Fairly common during the spring and summer months, and seen most frequently by the roadsides or on the higher ground.

48. **Pitangus sulphuratus bolivianus** (Lafr.). "BIÉN-TE-VEO" or "BICHO FÉO" (in imitation of its call). The Bienteveo is one of the first birds to attract the attention on coming into such country as that around La Plata. It is exceedingly versatile in its habits, and its notes are quite varied, though all have a rather harsh tone. It is very common in the Bosque, and also around the houses in the country. I found a nest with eggs as late as January 14.

49. **Myiophobus fasciatus fasciatus** (Müll.).— The little brown tyrant is very common at Los Talas late in the spring; it was found singly or in pairs and had the usual habits of the Tyrannidæ.

50. **Pyrocephalus rubinus rubinus** (Bodd.). VERMILION FLYCATCHER. — The vermilion tyrant bird is commonly called the "churrinche" from its note. I first saw it at the observatory, September 25, and from that date until I left La Plata it was very common in the Bosque and in the camp. It is not fond of heavily wooded districts or of swampy regions. Its habits are largely those of the typical flycatchers.

The Churrinche has a very pretty song which it utters when on the wing, much as does our Goldfinch, but the Churrinche moves its wings much more rapidly. The bird also sings at night without leaving his perch; and this night song is one of the most pleasant memories I have of my visit to the Argentine.

51. **Tyrannus melancholicus melancholicus** Vieill.— This Kingbird is common in the littoral forest, and to a lesser degree in the Bosque. It is as pugnacious as the North American Kingbirds, which it resembles in habits even to its hatred toward Hawks and other birds of prey. Though I have seen several Hawks put to flight by these birds, I never saw them attack the most common Hawk of the region, *Rostrhamus sociabilis*.

52. **Muscivora tyrannus** (Linn.).— The "Tijereta" (Scissor-tail) is a bird which cannot be overlooked. I first saw them October 18, when they became fairly common, and remained so until I had left La Plata. Many times in the Bosque at sunset I observed them going through a curious performance, mounting high in the air and whirling about, opening and shutting their tails, and then descending to the trees, all the while uttering percussive notes not unlike those of our Kingbird (*Tyrannus tyrannus*).

53. **Iridoprocne leucorrhoa** (Vieill.).— This, the most common swallow of the region, is abundant throughout the year about the houses in the camp and at the edge of town, though most numerous in summer. It

nested in considerable numbers under the roofs of several of the observatory buildings.

This swallow is the first bird heard in the early morning in La Plata, long before there is a suggestion of light in the east.

54. **Progne chalybea domestica** (Vieill.).— This sweet-voiced Martin is met with occasionally in the city of La Plata as well as on its outskirts, but is not common as a town bird. It has apparently suffered much from the introduction of the European House Sparrow, and seems now rather to avoid localities where those birds are numerous. The following story, told me by a friend, shows that sometimes the Martins turn upon the Sparrows.

During the summer of 1913–14 a pair of these Martins were seen building a nest under the eaves of a building near La Plata. They had made good progress, when a pair of Sparrows were noticed about the nest quite frequently. Finally, when the nest was almost done, the Sparrows began to approach the nest more closely while the owners were absent, and then to clamber over it, and finally to enter it. Once, when the Martins returned to find the Sparrows inside, a battle followed in which the Martins were decidedly worsted; after this the Sparrows boldly took possession. Then the Martins waited until both Sparrows were inside; one bird saw to it that they did not escape, while the other went for mud and plastered up the opening.

55. **Phæoprogne tapera** (Linn.).— This Martin is much more often seen than the preceding, despite the fact that it does not gather in flocks, as do the other swallows of the region. The flight of this bird has a peculiar feature: at times the wings are depressed much as those of a duck taking to water, and are constantly agitated with tremulous flutterings. This bird breeds only, as far as I could learn, in the abandoned nests of the Ovenbird; or, if none are available, it drives out the owners and takes possession of the oven by force.

56. **Petrochelidon pyrrhonota** (Vieill.).— I saw this swallow only on a few dates in October, and judged that it was a migrant; later I was told that this is the case.

57. **Troglodytes** sp.— There are two forms of *Troglodytes musculus* found at La Plata. *T. m. guarixa* and *T. m. hornensis*. The first of these is the more common; but the difference between them is so slight that to most people they are a single bird.

The Wren is very common and one of the best known birds in La Plata, where it is called the "Ratonera." The song is suggestive of that of the North American House Wren (*T. aëdon*), but is shorter and less varied. The nesting habits are about the same; but one remarkable case came to my notice, which I shall describe here.

About the middle of October a pair of Wrens started to build a nest under a hood in the observatory grounds which had been designed as a shelter for an electric light. They soon abandoned this site, built their nest elsewhere, and raised a brood of seven. Meanwhile a pair of "Mistos"

(*Sicalis pelzelni*) took over the old place, completed the nest which the Wren had begun, and seemed undisturbed; often I started the female from the nest as I passed by along the path. But on November 29 it was a Wren that flew from the nest as I approached. I investigated, and found three eggs of the Finch and two of the Wren in the nest. For several days after both birds were seen about the hood, nor did I detect any signs of ill feeling between them, and I was as likely to start one from the nest as I was the other. But unfortunately on December 3 the eggs were stolen by an Italian boy, and the female Misto was killed.

After about a week the Wrens returned to the nest, four more eggs were laid, incubation was started December 13, the eggs were hatched on December 26, and on January 8 the birds left the nest.

Another pair of Wrens built a nest in a little-used room of the machine shop at the observatory; the nest was placed in a box half full of miscellaneous bolts and screws, and seven eggs were laid which averaged 1.78 × 1.28 cm. In shape these eggs varied greatly, from some which were nearly elliptical to one which was actually pear-shaped!

57. **Planesticus rufiventris** (Vieill.). "ZORSAL."— I first saw this thrush on the sandy beach near the mouth of the ship-canal at La Plata, where it was running along just as does the North American Robin, cocking its head sideways from time to time as if it were listening for grubs. I did not see it extract any food from the beach; nor did this surprise me, for I should not suppose that a sandy beach so exposed to wave-action would be a very suitable place for a thrush to seek its food; and I decided that this action of the Zorsal was brought about by mere force of habit.

The Zorsal is much less bold than is our Robin; it never comes about the houses, but is confined to wooded districts. Its song resembles that of the Robin, but is more coherent; and it seemed to me that although inferior in strength, the voice of the southern bird is the sweeter.

58. **Mimus saturninus modulator** (Gould). "CALANDRIA."— The only Mockingbird that I saw at Los Talas, and not very plentiful there. Its song is like that of the typical Mimidæ, but I could not actually detect traces of other bird songs in it. On the whole I found it rather shy, and only occasionally did I see it about the houses or perched conspicuously.

59. **Polioptila dumicola** (Vieill.).— This dainty little Gnatcatcher resembles the North American *P. cærulea* closely, in appearance, in habits, and in notes. In the thickets at Los Talas it was tolerably common during the spring; my only record for the Bosque was a pair seen in an evergreen on December 21.

60. **Anthus correndera** Vieill. "CACHILA."— Four species of Pipits are catalogued as occurring at La Plata; the present species seemed to be the most common. It seemed to prefer marshy ground and wet meadows; at any rate I found very few Pipits on higher ground which showed the white shoulder marks that characterize this species.

The Pipits are very plentiful in the open plains about La Plata. They

are not shy, and unite in small flocks, so that it is quite easy to study their habits.

To sing the Cachila mounts to a considerable height; then with wings turned upward he begins his descent. He drops down a few feet, utters a sweet "Cachila, "then swings upward a short distance, and a gentle hissing sound is heard. He repeats this again and again until he reaches the ground. I never saw one rise to repeat the song without alighting on the ground. Thus the descent from a great height is made up of a series of little dips and rises, punctuated with bursts of song.

61. **Geothlypis æquinoctialis cucullata** (Lath.).—This little Masked Warbler is quite common in bushy ground, and it even comes about the houses in the Los Talas region. Its song, as Mr. Barrows says, is very suggestive of a subdued warbling of our Purple Finch (*Carpodacus purpureus*).

62. **Stephanophorus leucocephalus** (Vieill.).— This beautiful Blue Tanager is exceedingly shy, and though he may be heard often during the spring, he is very hard to locate. The song is rather pleasing, although somewhat jerky.

63. **Tanagra bonariensis** (Gm.).— Soon after my arrival at La Plata in July my attention was called to a party of these pretty birds in an oak tree in the observatory grounds. From that date until late in September I found small flocks of them in the Bosque. The only note I heard from them was a reedy call.

64. **Sporophila cærulescens** (Bonn et Vieill.). "CORBATITA."— These pretty little Finches appeared in numbers late in November, and were abundant in the fields wherever the weeds grew tall. They were commonly seen in groups of four or five birds, both at Los Talas and at the observatory, where I first saw them December 3. The song is a loud cheery cry, slightly suggestive of the song of the Indigo Bunting.

65. **Spinus ictericus ictericus** (Licht.).— This Goldfinch was but seldom seen. It goes in small parties, and does not seem to differ greatly from our Goldfinch in its habits.

66. **Sicalis pelzelni** Scl. "MISTO."— One of the most common birds about the town is the Misto Sparrow. His song is very unmelodious; it consists of shrill mouse-like squeaks poured out in a continuous stream. Whether this bird takes the initiative for itself in nest-building I cannot say; I have seen them breeding in the abandoned nests of the Ovenbird and of the Leñatero, and I have spoken above of a case where they completed an abandoned nest of the Wren, and later shared it with that bird. The eggs of this bird found in this last nest were marked with large spots of deep brown on a blue ground, and averaged 1.95 × 1.39 cm.

67. **Sicalis arvensis arvensis** (Kittl.). "MISTO."— This Misto, unlike the last, is a bird of the fields, and very rarely comes even to the edge of town. Through the winter months it gathers in great restless flocks. At this time they are not shy, but as the spring advances and the flocks break up, they become more and more sensitive to intrusion. The male

has a pretty song during the spring months; he flies upward from his perch to a considerable height, beginning his song as he rises; then he descends in a long spiral, the music becoming clearer and sweeter as he nears the ground, and often continuing in a faint whisper after he alights. Occasionally the Misto reascends to repeat his song without alighting.

68. **Brachyspiza capensis capensis** (Müll.). "CHINGOLO."— Throughout a great part of the country the Chingolo is the favorite bird It is one of the first birds to meet the eye of the stranger, and its pretty habits and its pretty song keep it constantly in view. In La Plata the song usually consists of two distinct parts: the first a clear whistle very like that opening the song of the Meadowlark (*Sturnella*) of eastern North America, and the second a trill like that of the Chipping Sparrow. The song varies with different birds; some omit the clear whistle, others the short trill. The Chingolo often sings at night from his perch, and then the trill at the end is given more slowly and is usually long drawn out.

The nest is built on or near the ground; I have found them in both localities in the observatory grounds. The eggs in each case were four, thickly spotted with brown on a pale blue ground, and averaged 2.05 × 1.57 cm. The period of incubation is 13 days; four days later the young birds have their eyes open, and eleven days after breaking the egg the young birds leave the nest.

69. **Poospiza personata** (Swains.). "CHILÓE."— I first found this bird on September 12; soon it became common, and was one of the most numerous birds in regions where bushes and scattered trees were found. It feeds on the ground after the usual manner of the ground finches; and also several times I saw it perched conspicuously to make sallies for passing insects as do many of the Tyrannidæ.

The song is heard at all hours of the day, and soon becomes so familiar as not to be noticed. It can be worded "wetch-wetchy, wetch-wetchy, wetch-wetchy," slowly and deliberately repeated many times. It may be that the common name "chilóe" is a transcription of this song.

A nest which I found November 7 contained one egg, pale blue marked irregularly with dark brown, and measured 1.87 × 1.50 cm. The nest was on the ground under a large thistle, so well concealed that although I marked carefully the exact spot from which the bird flew, I was more than fifteen minutes in finding the nest. Later this nest was abandoned.

70. **Passer domesticus** (Linn.). "GORRIÓN."— The House Sparrow has been introduced into the Argentine with much the same result that followed its introduction into this country.

71. **Embernagra platensis** (Gm.).— This large Finch was found only among the tall reeds in the open marsh, where they are not very shy. Their flight is peculiar — they spring suddenly from the ground and fly laboriously with tail erect and legs dangling. I heard none of their notes except a sudden alarm cry.

72. **Paroaria cucullata** (Lath.). "CARDINAL."— Not at all common. I found them but twice in the woods at Los Talas. They are very con-

spicuous, but not very shy. The song is not noteworthy; it has a cheerful ring, but lacks variety.

73. **Molothrus bonariensis bonariensis** (Gm.).— The common name of this bird is "Tordo," the Spanish form of Turdus; but a more suitable name is one which I once heard applied to it: "El Renegado." It is larger and more attractive than *M. ater* of North America, and has quite an attractive little song which it delivers with much display; and at times the bird is so carried away by his emotion that he takes to the air and flies about, singing all the time. The only note I heard from the female was a sputtering alarm call.

In general habits this bird is similar to *M. ater*.

74. **Molothrus badius** (Vieill.).— This gray Cowbird is not nearly so common as the other; it is usually seen in flocks of about fifteen birds. I found it most often in trees, especially the eucalyptus, where its movements were slow and deliberate. Of its breeding habits I learned nothing.

The notes of this bird are more varied than those of *M. bonariensis*; and before taking flight, as Hudson says, "They invite each other to fly with long clear notes powerful enough to be heard a quarter of a mile away."

75. **Agelaius thilius** (Mol.). "TRILI," "TORDO DEL BAÑADO."— This little blackbird is gregarious, and is found on the edge of the marsh in great numbers, where its rather pretty song may be heard from numbers of the birds.

76. **Leistes militaris superciliaris** (Bp.). "PECHO COLORADO."— The name "red breast" is splendidly adapted to this bird. It is fond of moist meadows where the grass is long, and here it appears in considerable numbers in October. The female keeps hidden most of the time; her flight is weak and very erratic. On the other hand, the male is always conspicuous, especially when singing. He rises to a height of some forty feet to deliver a single rather pleasing note, after which he drops back to his original perch. Between two points his flight is low and direct, though rather laborious.

77. **Pseudoleistes virescens** (Vieill.). "PECHO AMARILLO" (YELLOW BREAST).— This is one of the most familiar marsh birds. Its large size and its bright yellow breast make it conspicuous, and its noisy and gregarious habits bring it forcibly to our attention.

In closing I wish to return my thanks to Dr. Carl Bruch and to Dr. Miguel Fernández of the Museo Nacional at La Plata, and also to Dr. Robert Dabbene, of the Museo Nacional of Buenos Aires, for the very valuable assistance which they gave me in my work.

RECORDS OF BIRDS NEW TO THE PRIBILOF ISLANDS INCLUDING TWO NEW TO NORTH AMERICA.[1]

BY G. DALLAS HANNA.

To an ornithologist stationed on the Pribilof Islands in Bering Sea, the opportunities for making observations are exceptionally good, and the possibility of obtaining new and rare visitors seems to be almost unlimited. The list of Asiatic stragglers already recorded from the group is comparatively large. But migrants come from other directions as well as from the west and the frequent and large cyclonic storms in that region may be responsible for the occurrence there of so many birds found regularly no nearer than several hundred miles.

Specimens of all of the species recorded herein were obtained by me during my recent residence on the islands (July, 1913 to September, 1915), with the exception of the Least Sandpiper and the Pileolated Warbler which were obtained by W. H. Osgood and A. G. Whitney respectively. All of the specimens collected have been deposited in the United States National Museum by the Bureau of Fisheries.

I am under obligations to Edward A. Preble, H. C. Oberholser and Alexander Wetmore for assistance in determining these birds.

Species New to North America.

Clangula clangula clangula. EUROPEAN GOLDEN-EYE.— A female was shot from a flock of four in the Salt Lagoon of St. Paul Island, Bering Sea, November 27, 1914. It is the same size as specimens from the Commander Islands and China and while these are somewhat larger than birds from the Atlantic coast region of Europe, they are smaller than those from continental North America.

Fringilla montifringilla. BRAMBLING.— A male was captured in the watch house at Northeast Point, St. Paul Island, Bering Sea, October 25, 1914. The specimen is defective in that it lacks the tail feathers.

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[1] Published by permission of the Commissioner of Fisheries.

Other Species New to the Pribilof Islands.

Colymbus auritus. HORNED GREBE.— Two specimens were obtained on St. George Island, a male October 13, 1913, and a female, December 19, 1913. Two others were secured on St. Paul Island, a male, November 30, 1914, and an unsexed specimen, January 6, 1915. Others were observed and it seems probable that the species is of regular occurrence in the fall and early winter. All specimens were found feeding along the beaches in the surf.

Charitonetta albeola. BUFFLE-HEAD.— Two males were secured on St. George Island, one November 19, 1913, and the other May 19, 1914. A dead bird was seen in the possession of a native on St. Paul Island but no specimens have thus far been preserved from there.

Branta nigricans. BLACK BRANT.— A male was obtained on St. George Island, September 28, 1913, and another on St. Paul Island, September 17, 1914. Small flocks and single birds seem to occur regularly each spring and fall and it has been my experience that this species is more common on the islands than any other goose except the Emperor.

Pisobia minutilla. LEAST SANDPIPER.— A female was taken by W. H. Osgood at Kaminista Lake, St. Paul Island, on August 29, 1914.

Pisobia bairdi. BAIRD'S SANDPIPER.— Three males were obtained at Kaminista Lake, St. Paul Island, August 31, 1914. The species was carefully looked for among the Pectoral and Sharp-tailed Sandpipers which resort to these islands in numbers in the fall but these three birds were the only ones seen.

Rhyacophilus glareola. WOOD SANDPIPER.— One specimen was obtained on St. George Island, May 19, 1914. A blue fox destroyed most of the skin, after it was made up, but there remain the essential portions for identification. This seems to be the second record of the species in North America.

Falco peregrinus pealei. PEALE'S FALCON.— A female was obtained on St. George Island, March 12, 1914. Other duck hawks, apparently of the typical form, were observed on that island but thus far none have been secured for specimens.

Acanthis hornemanni exilipes. HOARY REDPOLL.— A female was obtained at the village on St. Paul Island April 21, 1915. A pair was later seen on the same island at Northeast Point. They probably came over with *Acanthis linaria linaria* which occurs frequently on both islands. Young of the year of the latter species were collected on St. George Island in the fall of 1913.

Melospiza melodia sanaka. ALEUTIAN SONG SPARROW.— Two specimens were collected on St. George Island, a male, October 28, 1913, at the village and a female, December 21, 1913, at Garden Cove. Both birds were feeding on the beaches.

Tachycineta thalassina lepida. NORTHERN VIOLET-GREEN SWAL-

LOW.— Two specimens, one a male and the other unsexed, were obtained at the head of the Salt Lagoon, St. Paul Island, August 22, 1914, while Mr. E. A. Preble and I were crossing over to Zapadni Rookery. Three were seen at this time, feeding on flying insects.

Wilsonia pusilla pileolata. PILEOLATED WARBLER.— Two specimens were taken on St. Paul Island, August 25, 1913, by Mr. A. G. Whitney. The species was also observed on St. George Island on August 20, 1913, by the writer, but no specimens were secured there.

Additional Species of Particular Interest.

Cepphus columba. PIGEON GUILLEMOT.— This is a common winter resident, and by April 18, 1915, some had the black summer plumage almost complete though still slightly speckled with white. It is strange that this bird should not breed on the Pribilofs, since it is so abundant on the neighboring Aleutians. The last one seen in 1915 was on May 26. In winter it feeds along the surf line, is very tame and utters a low, shrill whistle when observed. A male and a female were taken on each island. The species has been previously recorded from the Islands but apparently no specimens were secured prior to my work there.

Phalacrocorax pelagicus robustus. VIOLET-GREEN CORMORANT.— This species is common about the Pribilof Islands in winter and is recognised as different from the Red-faced by the natives who term it "sea shag." One adult male was secured on St. Paul Island. The species has been previously recorded.

Nettion carolinense. GREEN-WINGED TEAL.— A pair nested in Antone Lake, St. Paul Island, in 1914, and a female with two young were collected there in August of that year. It has been previously reported from the group but not collected. The identification of this species must remain doubtful for the present because no males have been collected or carefully observed; the females of the American and European forms differ little, if any. Adult males from the Islands are very desirable.

Olor columbianus. WHISTLING SWAN.— A young bird was shot on St. George Island, October 10, 1913, by a native, Mike Shane, and portions of it were saved for identification. Another was killed there the following year. It has been previously recorded from the group but not collected.

Totanus flavipes. LESSER YELLOW-LEGS.— A female was taken at Gavarooski Lake, St. George Island, October 18, 1913. It has been previously reported, but not collected, from the group.

Acanthis linaria linaria. REDPOLL.— Specimens were collected at various times in fall, winter, and spring on both islands. It has been previously recorded from the islands but the specimens, if collected, have apparently been lost.

Passerculus sandwichensis alaudinus. WESTERN SAVANNAH SPAR-

ROW.— A female was obtained on St. George Island, September 1, 1913. It has been previously recorded from the group but not collected.

Nannus alascensis. ALASKA WREN.— This wren, long known and so abundant on St. George Island, was found on St. Paul Island in 1914 for the first time, and again in 1915. Five birds were seen on the latter island and three were collected.

THE BIRDS OF VIEQUES ISLAND, PORTO RICO.

ALEXANDER WETMORE.

VIEQUES, called "Bieque or Crab Island," on the older maps lies fourteen miles off the eastern coast of Porto Rico and is the most western of the Virgin group. Notes on the avifauna of this island occur at random through the literature pertaining to the West Indies but no complete list of the birds of Vieques has been attempted. Mr. B. S. Bowdish (1900) has published a few notes on the winter birds of the island but other published matter pertaining to the subject is widely scattered. Though all unusual records are included in the writer's Birds of Porto Rico (Wetmore, 1916) it is believed that an annotated list of the birds complete so far as present knowledge permits will be of value to workers interested in this region. Much new matter in the form of hitherto unpublished field notes is included in this paper.

Though Vieques Island was settled first in 1524 little attention appears to have been accorded it by early naturalists. Apotheker Riise of St. Thomas sent a collector across to Vieques about the year 1860 (Newton, 1860): he secured a number of birds among which are recorded the Woodpecker, the Lizard Cuckoo, and one *Molothrus atronitens*. Apparently the island was not visited by an ornithological collector again until 1899 when naturalists from the U. S. Fish Commission Steamer "Fish Hawk" landed there on February 6, 7, and 8. The birds secured were collected by Dr. J. D. Milligan and Mr. A. B. Baker.

Following this Mr. B. S. Bowdish came to the island about

November 5, 1899, and remained until February 10, 1900. Apparently this is the most extended visit which has been made by an ornithologist. His notes on "Some winter birds of the Island of Vieques" (Bowdish, 1900) constitute the only separate paper on the avifauna of this island that has come to my notice.

In this same year (1900) Dr. C. W. Richmond and Dr. L. Stejneger during their sojourn in Porto Rico visited Vieques Island, collecting there from March 22 to 28.

On March 16, 1912, the writer crossed to Vieques Island from Fajardo Porto Rico in a small sloop and remained until April 4. Headquarters were made in the town of Isabel II, a pleasant place with wide streets lined with flamboyant trees (*Poinciana regia*), somewhat in contrast to the narrow *calles* and closely crowded houses common in Porto Rican towns. In addition to this visit two days — April 22 and 23 — were spent here on returning from Culebra. During this work Dr. J. S. M. Pressley and Mr. Harold Stiles who was at that time judge of the district, gave friendly assistance. And in Señor José Bartôn, a gentleman well-informed as to the natural history of his native island, I found a pleasant companion on many field excursions.

PHYSICAL FEATURES.

In size Vieques Island is approximately 18 miles long by 3 broad comprising nearly 45 square miles of territory. A chain of low rounded hills extends the length of the island rising in Mount Pirata at the western end to an elevation of about five hundred feet. The low hills slope down directly to the sea with no intervening alluvial coastal plain. In general the south coast line is more abrupt, rocky headlands from 30 to 80 feet in height alternating with small bays bordered by sandy beaches. On the north the elevations are in the main lower and cliffs are less common along the shore line. The hills are of limestone with outcrops of coral rock. Inland granite boulders are scattered in the pastures. The western half of the island has large areas planted in sugar cane and extensive pastures dotted with bushes. The eastern end is wild and little frequented. There low valleys grown with bushes

bound together with thorny creepers are difficult of passage and winding cattle trails afford the only pathways. Many hilltops are densely covered with brush and trees, and on the south coast are considerable areas of virgin forest. Several lagoons fringed with mangroves furnish resorts for water birds. There are small streams on the island but at the time of my visit they had only scattered pools of brackish water along their beds. Pools in the largest stream contained numbers of tadpoles and minnows.

Vieques is a dry island with droughts that at times are unbroken for the space of a year. At the time of my visit quick dashing showers were frequent but were barely sufficient to moisten the surface of the ground. The average rainfall since 1903 ranges from 38.59 inches (1912) to 55.25 inches (1905). Though I found the heat of the sun intense the atmosphere was dry with none of the depressing humidity of the north coast of Porto Rico. The steady refreshing stream of the trade winds moderated the heat and in doors the days were comfortable and cool.

General Conditions.

In its vegetation and general appearance Vieques is similar to the southern side of Porto Rico. Along the northern shore line the force of the trade winds distorts many of the trees and shrubs. Growths of *uvas de playa* (*Coccolobis* sp.), common along the sandy beaches, were as even on the side exposed to the wind as though trimmed by hedge shears. Even the springy *lluma* palm (*Aeria attenuata*) grew prostrate in a few localities and it was not uncommon to see a small deciduous shrub with the branches developed entirely on one side so that it was blown out like a flag in the wind.

Sea grapes (*Coccolobis* sp.) fringed the beaches, and mangroves bordered the lagoons. The pastures were dotted with thorny *asoto caballo* (*Randia aculeata*), a spiny introduced acacia, the *rallo* (*Acacia farnesiana*), and scattered trees of the *muñeco* (*Cordia collococca*). The mango (*Mangifera indica*), *moral* (*Cordia nitida*), *palma de lluma* (*Aeria attenuata*) and bay tree or *ausú* (*Amomis caryophyllata*) were not uncommon. The *palo blanco* (*Drypetes*

sp.) wild figs (*Ficus* sp.) and *cabo de hacha* (*Trichilia hirta*) were prominent in the forests. A milkweed (*Asclepias* sp.) six feet tall with a woody stem was common in some localities and prickly pear (*Opuntia* sp.) and another cactus (*Cereus* sp.) were abundant. At the time of my arrival *Cordia collococca* was in blossom but all of its leaves had fallen, while the flamboyant tree (*Poinciana regia*) an introduced species, was also leafless but was maturing its seeds.

Of indigenous mammals bats alone occur; and the only species noted was a *Molossus*. Others were said to be abundant in certain caves whose locations the natives obstinately refused to divulge. The mongoose (*Mungos birmanicus*) is more abundant than in Porto Rico, but does not seem to keep the rats in check. Lizards are very common. The *siguana* (*Ameiva exul*) was found along the beaches and small anolis (*Anolis cristatellus* and *A. stratulus*) were abundant everywhere. A few adult individuals and many tadpoles of the frog-like *Leptodactylus albilabris* were seen and the *coquî* (*Eleutherodactylus antillensis*) was heard calling occasionally in the evening.

Bird Life.

Though separated from Porto Rico by a strait only 14 miles wide the avifauna of Vieques shows certain differences from that of the larger island. Certain Greater Antillean forms are lacking while a few others ranging up through the Lesser Antilles apparently find here their farthest westward extension. Of the sixty-five species of birds which are credited to the island in the following list there are actual records for fifty-five. Ten other forms of undoubted occurrence are included as reported by hunters or from other sources. Eighteen of the species listed are North American migrants present here in migration or through the winter. Two species, *Saurothera vieilloti* and *Molothrus atronitens* may be regarded as stragglers arriving here merely by chance. The following three forms are not known at present to visit Porto Rico:

Microlyssa e. exilis.
Sericotes h. holosericeus.
Elainea m. martinica.

Of the twenty-five species and subspecies of birds that are restricted to Porto Rico (here taken as a political division including Mona, Desecheo, Porto Rico, Vieques and Culebra) the following nine occur on Vieques:

Amazona vittata (?) (reported)
Saurothera vieilloti (one record)
Melanerpes portoricensis
Gymnasio nudipes (?) (reported)
Tolmarchus taylori
Myiarchus antillarum
Dendroica adelaidæ
Holoquiscalus brachypterus
Tiaris o. bryanti

Opposed to these are sixteen forms precinctive in Porto Rico which are not known to cross to Vieques Island. Among them are several genera typical of the Greater Antilles. The list of these missing forms is as follows:

Accipiter striatus venator
Chæmepelia p. exigua (Mona Island)
Todus mexicanus
Asio portoricensis
Chlorostilbon maugæi
Anthracothorax viridis
Blacicus blancoi
Mimocichla a. portoricensis
Corvus l. leucognaphalus
Vireo latimeri
Icterus portoricensis
Agelaius xanthomus
Tanagra sclateri (introduced into Vieques?)
Spindalis portoricensis
Nesospingus speculiferus
Pyrrhulagra portoricensis

The avifauna then resembles that of Porto Rico closely with the addition of three forms that are not at present known to cross the

passage to the larger island. This same strait, though only from 6 to 11 fathoms deep, is a barrier to fifteen of the Greater Antillean forms found on Porto Rico, while of the nine forms that do cross three are of uncertain status as bona fide species for Vieques Island.

MIGRATION.

Two of the breeding birds of the island are migratory, viz., *Progne dominicensis*, and *Vireosylva c. calidris*. A third, *Elainea m. martinica* is believed to be only a summer visitant not a resident. The first two probably arrive in February; the last was not noted until March 25, 1912.

Among the North American migrant Warblers there was almost constant movement during my visit. These birds always seemed restless and a diurnal migration from east to west along the length of the island was noticed. On March 19, March 27, and again on April 2 true waves of migration occurred and these birds were exceptionally common and active. Parula and Prairie Warblers, Ovenbirds, Redstarts and Black and White Warblers were all affected in this movement. In each case the bulk of these birds disappeared at once and they were present in their usual numbers during the following days. Vieques Island forms a stepping stone for the individuals that winter in the Lesser Antilles, in their vernal and autumnal flights and many interesting observations might be made here by a resident ornithologist. Many species may be added to the migrants given in the following list, especially among the shorebirds and warblers and stragglers are to be expected in all groups.

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ANNOTATED LIST.

1. **Podilymbus podiceps antillarum** Bangs. ANTILLEAN PIED-BILLED GREBE.— A grebe known as the zaramagullon was reported from the lagoon at Playa Grande on the western end of the island. As the lagoons on Vieques are dry some seasons the birds may not breed there.

2. **Pelecanus occidentalis** Linnæus. BROWN PELICAN.— During my residence on Vieques Island there were usually a few pelicans in Port Mulas at Isabel II. Others were seen flying elsewhere along the shore. At times they are said to disappear entirely for a week or more and appear again suddenly in small numbers. The islet known as Caballo Blanco off Port Mulas, rising three feet above the sea, with its top scantily covered with vegetation, is reputed to harbor a breeding colony, but in passing near it in a small sloop on April 23 I could see no sign of pelicans.

3. **Sula leucogastra** (Boddaert). BOOBY.— The Booby was reported as an occasional visitant to the shores of the island.

4. **Fregata magnificens** Matthews. MAN-O'-WAR-BIRD.— Frigate birds were seen soaring high over the sea near Manuel Quí and also at Campania. Mr. Bowdish (1900) records them also.

5. **Nyctanassa violacea** (Linnæus). YELLOW-CROWNED NIGHT HERON.— Resident. In a dry swamp near Manuel Quí I found a few pairs of Yaboas roosting in the middle of the day in the dense heavy shel-

ter of the forest growth. When flushed they flew heavily for a short distance and then perched again in the tree tops, seeming rather stupid. They are considered a game bird.

6. **Butorides virescens cubanus** Oberholser. CUBAN GREEN HERON. — Resident. Mr. Bowdish found the Green Heron very abundant at the mouths of small streams. In 1912 though fairly common it did not compare in abundance with the numbers found on Porto Rico. There were few places suited for it, as cover was not common along the small streams. One immature bird rather than fly attempted to escape by clambering rapidly away through the branches of a clump of mangroves. Two adults were secured on March 27 and an immature male on March 30.

7. **Florida cærulea cærulescens** (Latham). LITTLE BLUE HERON.— Resident. This species was the only heron that was common on the island. It was seen often along the coast and many were found inland in the high dry pastures. An adult male was taken on March 29.

8. **Egretta thula thula** (Molina). SNOWY HERON.— A few were seen along the beaches, around the lagoons, and at the mouths of the streams. They were in full breeding plumage at this season. A bird seen near Manuel Quí on March 25 was very tame.

9. **Herodias egretta** (Gmelin). EGRET.— Reported by José Bartôn.

[**Phœnicopterus ruber** Linnæus. FLAMINGO.— Gundlach[1] remarks that the flamingo is said to have been common on the small islands east of Porto Rico. There are unconfirmed rumors of the former occurrence of this bird on Vieques Island.]

10. **Marila affinis** (Eyton). LESSER SCAUP DUCK.— Reported as occasional in winter.

11. **Dendrocygna arborea** (Linnæus). WEST INDIAN TREE DUCK.— Tree ducks (Yaguasas) were said to occur at times on the larger lagoons.[2]

12. **Falco sparverius loquacula** Riley. PORTO RICAN SPARROW HAWK.— Resident. Sparrow Hawks were fairly common in the tree dotted pastures of Vieques. Tops of small trees or dead stubs made convenient perches from which they watched for lizards and large Orthoptera. Their numbers here must be regulated by the small number of available nesting holes. Vieques Island is the type locality of this form (cf. Riley, 1904, p. 284). In a small series collected, one male taken March 27 has the distal end of the rectrices much worn from clinging at a nesting hole or, questionably, from actually assisting in the duties of incubation.

13. **Buteo borealis** (Gmelin). RED-TAILED HAWK.— Resident. A few Red-tailed Hawks were noted in the wilder parts of the island toward the eastern end. A nest in a tree 40 feet from the ground was said to have contained young two-thirds grown on March 10. The shrill scream of these birds was heard almost daily. It is doubtful if there are more than

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[1] Apuntes para la Fauna Puerto Riqueña, An. Soc. Esp. Hist. Nat., Madrid, 1878, p. 398.

[2] This species was listed by me from Porto Rico as *D. autumnalis* through error (Wetmore, 1916, p. 30).

ten or a dozen remaining on the island. The species has been much persecuted.

14. **Pandion haliaëtus carolinensis** (Gmelin). OSPREY.— Bowdish (1900, p. 72) secured a male on December 31, 1899, and says that two pairs were seen. Probably a regular winter visitant.

15. **Gallinula galeata galeata** (Lichtenstein). FLORIDA GALLINULE. — Hunters reported that this bird was found on the lagoons when they were filled with water.

16. **Rallus longirostris caribæus** Ridgway. CARIBBEAN CLAPPER RAIL.— Resident. Tracks of these birds were seen in the mud bordering the lagoons.

17. **Eupoda wilsonia rufinucha** (Ridgway). RUFOUS-NAPED PLOVER — Mr. Bowdish found these birds at times in flocks of a dozen upon the beaches until December 1, 1899. One was taken on November 5. Dr. Richmond noted them on March 23, 1900, and secured three on March 27. None were found during my visit to the island.

18. **Charadrius semipalmatus** (Bonaparte). SEMIPALMATED PLOVER.— Migrant. On March 30, one was seen on the beach on the north side of the island. When flushed it passed out of sight across the water going due north.

19. **Oxyechus vociferus rubidus** Riley. ANTILLEAN KILLDEER.— One was seen near Martinez on March 16. On March 23 two were flushed along a small stream and flew calling loudly over a pasture. These two were collected and were found to be male and female. The latter contained an egg nearly ready for the shell. The Killdeer may be considered as a resident here.

20. **Actitis macularia** (Linnæus). SPOTTED SANDPIPER.— Fairly common as a winter visitant along small streams and beaches. Individuals were seen until the time of my departure for Culebra on April 4.

21. **Totanus flavipes** (Gmelin). LESSER YELLOW-LEGS.— The only record for this bird is that of one seen on March 25, 1900, by Dr. C. W. Richmond. There is no reason to believe that it is not a regular migrant.

22. **Himantopus mexicanus** (Müller). BLACK-NECKED STILT.— These birds were reported to Dr. C. W. Richmond on March 24, 1900, by Lieutenant Chapelle as seen around the lagoon at Playa Grande.

23. **Larus atricilla** (Linnæus). LAUGHING GULL.— On April 22 one was seen in Port Mulas at Isabel II.

24. **Sterna maxima** Boddaert. ROYAL TERN.— A few were noted along the coast during March and April.

25. **Geotrygon montana** (Linnæus). RUDDY QUAIL-DOVE.— The Quail-Dove was said to be fairly common on Vieques Island, but none were seen. As the mongoose is now so abundant these doves may have decreased in numbers during recent years. Mr. Bowdish (1902–3, p. 361) secured a male on December 30, 1899, and Señor José Bartôn told me that he found them in the brushy region of the eastern end of the island.

26. **Chæmepelia passerina trochila** Bonaparte. PORTO RICAN

GROUND DOVE.— Resident. This species was very abundant in the roads that cut the cane fields into great squares and was common along trails and in pastures. Usually the birds were in pairs but small flocks were found even up to the first of April. They seemed to prefer the heat of midday to the cooler morning and evening. A heavy dew usually held them inactive until it had dried. They perch readily in open trees sitting close together. When they feel under observation they become nervous at once, walking along the limbs with nodding heads. Then suddenly taking alarm they fly out with considerable noise.

The breeding season here began about March 20. As I have already noted (Wetmore, 1916, p. 49) the nests found on Vieques Island were larger and bulkier than those from Porto Rico. On March 30 I collected a set of two eggs with incubation just begun, from a nest on the horizontal limb of a *Muñeco* (*Cordia collococca*), about seven feet from the ground. This nest contained more material than any other dove's nest that has come under my observation and in form was deep, cup-shaped and thick-walled. The male was engaged in incubation. On this same date another nest similar to the first one but as yet empty was discovered.

These doves are said at times to pick up kernels of corn shelled out and dropped by the blackbirds (*Holoquiscalus brachypterus*) but I did not observe them doing this.

27. **Zenaida zenaida lucida** Noble. ZENAIDA DOVE.— Resident. Very common in the dense growth of the dry heavily forested hills and found frequently in the brushy pastures. In the forests it was hard to get near them, only the loud clapping of their wings betraying them as they flushed at some distance ahead. March was apparently the height of their breeding season and the males were heard cooing constantly, a song very similar to that of *Zenaidura macroura*. In May and June they are said to come in flocks to feed on the fruit of the *Palo blanco* (*Drypetes* sp.). Many are shot by sportsmen at this time. This bird is recorded by Mr. Bowdish through an error as the Mourning Dove (1900, p. 72).

28. **Patagiœnas leucocephala** (Linnæus). WHITE-CROWNED PIGEON. —Resident. On March 25 this pigeon was fairly common in a strip of heavy swampy timber near Porto Ferro. Their flight was strong and swift and while in the trees they sat motionless, hidden in the leafy branches. One was taken. Near Mameyes on Porto Rico these pigeons were known locally as "Viequera" from the belief that they did not nest on the main island but crossed from Vieques when the *icacos* (*Chrysobalanus icaco*) were ripe in order to feed upon them. Their fondness for this fruit at Mameyes was noticeable but they nested without doubt in the same locality as that in which they were feeding. Ordinarily this pigeon bears the native name of *Paloma cabeziblanco*. In May and June when various wild fruits are ripe they come out of the swamps in large flocks and gather to feed in localities in which they are unknown during the breeding season.

29. **Patagiœnas squamosa** (Bonneterre). SCALED PIGEON.— Formerly these large pigeons were common but now there are only a few re-

maining. One was seen near Porto Ferro on March 25, 1912. Dr. C. W. Richmond secured one on March 28, 1900.

[**Aratinga** sp.— A paroquet was said to occur on the island occasionally during the rainy season in the months of June, July, and August, but I was unable to substantiate these reports. It is barely possible that *Eupsitula pertinax* from St. Thomas might cross with the trade winds as the islands lie within sight of each other. Gundlach [1] heard of a paroquet on Vieques Island.]

30. **Amazona vittata** (Boddaert) (?). PORTO RICAN PARROT.— Parrots are found during the rainy season in the months of June, July and August in the heavy forest of the southern side of the island. It is believed that they cross at that season from Porto Rico. Señor José Bartôn was well acquainted with them and told me that they were considered a game bird, making a highly desirable dish for the table. There were none here during the period of my visit.

31. **Coccyzus minor nesiotes** (Cabanis). MANGROVE CUCKOO.— Resident. In thick brushy growths on the southern side of Vieques Island these cuckoos were common but were difficult to secure. Their notes came frequently from the dense, dry, thorny thickets lying in the intense blazing heat of the sun, but the birds themselves, working slowly and methodically through the bushes usually near the ground, were not often seen. The last week in March marked the beginning of the breeding season here. Specimens were taken on March 25.

32. **Saurothera vieilloti** Bonaparte. VIEILLOT'S GROUND CUCKOO.— The only record of this bird for Vieques Island is that of A. and E. Newton (Ibis 1859, p. 378) who note that a collector in the employ of Apotheker Riise of St. Thomas secured one here. It can be regarded only as a straggler though it is possible that the bird may have been resident here formerly.

33. **Crotophaga ani** Linnæus. ANI.— A fairly common resident of the brushy pastures. The Ani was found in flocks of six or eight feeding near the cattle or sitting in the tops of bushes calling querulously at the appearance of an intruder. A nest found the last week in March was built in a clump of thorny bushes about six feet from the ground. It was made of twigs and was large and bulky, forming a mass two feet across. The interior was still unfinished. Anis were taken on March 20, 23, 25 and 30.

34. **Melanerpes portoricensis** (Daudin). PORTO RICAN WOODPECKER.— A common resident species in the forest regions of the island. On March 25 one was seen feeding well grown young in a hole in a stub about twenty feet from the ground. The woodpeckers were all nesting at this time and were very noisy and vociferous. Specimens were secured on March 18, 19, 25 and 29.

35. **Streptoceryle alcyon alcyon** (Linnæus). BELTED KINGFISHER. — A regular migrant and winter visitant. Mr. Bowdish (1900, p. 72) secured a male on December 10, 1899. I shot one on March 30, 1912, and

[1] Apuntes para la Fauna Puerto Riqueña, An. Soc. Esp. Hist. Nat., Madrid, 1878, p. 229.

the birds were seen until April 4 when I left the island. They were found along the beaches and near the small streams where in shallow pools minnows and tadpoles were abundant. An incident in which a wing tipped kingfisher figured stands out clearly in my remembrances of Vieques. The bird made into a thicket of thorny bushes and to prevent its escape I laid my gun on it only to discover that I had also dropped it across a wasp's nest.

36. **Gymnasio nudipes** (Daudin) (?). BARE-LEGGED OWL.— Señor José Bartôn told of seeing one of these small owls at close range in the hills at the eastern end of Vieques a number of years ago. This bird may have been true *nudipes* or the subspecies *newtoni*, as St. Croix is only a short distance away, or it is possible that a new form may exist here.

37. **Antrostomus carolinensis** (Gmelin). CHUCK-WILL'S-WIDOW.— A migrant species probably of regular occurrence in winter. Mr. B. S. Bowdish (1902–3, p. 365) shot two of these birds in a creek-bottom on December 15 and 28, 1899, and saw others.

38. **Microlyssa exilis exilis** (Gmelin). GILT-CRESTED HUMMINGBIRD. —This bird was fairly common on Vieques Island during my stay and I considered it a resident. It may be however that it is a migrant as Mr. Bowdish does not record it nor had it been found here previous to my visit. The first bird that I collected on the island was this beautiful crested hummer and in suitable localities it was fairly common. The blossoms of the Muñeco (*Cordia collococca*) were attractive to them and others were found about the thorny acacia known as *rallo* (*Vachellia farnesiana*). With other hummingbirds they visited the cultivated *gonduros* (*Cajanus cajan*). They were quick and active and the flight was accompanied by a loud buzzing or humming. Except for this they were silent. Specimens were taken March 18, 19, 23, and 29.

This species has been recorded from Porto Rico (cf. Wetmore, 1916, p. 70) on the strength of specimens sent by Hjalmarson to Sundevall and one of these is at present in the U. S. National Museum collection. Gundlach[1] however considers that these skins may have come from St. Bartholomew and remarks as follows (loc. cit.):

"En mi segundo viaje .... volví a ver .... el ejemplar de la collecion de Hjalmarson en Arecibo, y encontré que tení una tarjeta con la palabra Saint Bartholome, ecrita por otra persona y no por Hjalmarson, quien preguntado por mi de nuevo, me dijo que no se acordaba sí el habia tenido ejemplares muertos en la isla de Puerto Rico, o sí los ejemplares vistos por Sundevall habian provenido de la de Saint Bartholome u otra, y habian dada, como enviados de él, motivo a creerlos puerto-riqueños."

39. **Sericotes holosericeus holosericeus** (Linnæus). GREEN CARIB. — A common resident species though like the Gilt-crested Hummer it may be a migrant as it was not known from Vieques Island previous to my visit.

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[1] Apuntes para la Fauna Puerto-Riqueña, An. Soc. Esp. Hist. Nat., Madrid, 1878, p.224.

These hummers were found usually in the forested areas, and remained in the shade during the heat of the day. The flowers of the *Gonduro* (*Cajanus cajan*) were their favorite feeding grounds and nearly all of my specimens were taken about these growths. These hummingbirds are large and though they flew with great rapidity, were not so active as the other species. Specimens were secured on March 18 and 23. From observations made on March 23, females were feeding young at that date so that the nesting season here must be rather early. In tropical regions however, dates of nest-building and reproduction seem liable to variation from year to year through influences which to us are not perceptible or have not as yet been noted. So that generalizations based on the observations of a single season are not in my opinion altogether trustworthy but should be checked by notes made during a period of years.

40. **Anthracothorax aurulentus** (Audebert and Vieillot). PORTO RICAN MANGO.— Resident. On Vieques wherever there were flowers I was certain to find hummingbirds and of all the species on the island the present one was the most common. The flowers of the *Molinillo* (*Leonotis* sp.) were more attractive to this bird than to the other forms. These hummingbirds are large and robust and when perched appear as big as honey-creepers. The young were fully grown on my arrival and were caring for themselves. Specimens were shot on March 18 and 19.

41. **Tyrannus dominicensis dominicensis** (Gmelin). GRAY KINGBIRD.— A common resident in the brushy pastures. Birds were taken for specimens on March 19, 20, 22, and 23.

42. **Tolmarchus taylori** (Sclater). PORTO RICAN PETCHARY.— A tolerably common resident. These birds frequented the larger trees of the forest growth and were not found elsewhere on the island. A pair observed on March 28 were evidently mated and I considered this the beginning of the breeding season. Birds were taken on March 18, 21, 25 and 29.

43. **Myiarchus antillarum** (Bryant). ANTILLEAN FLYCATCHER.— A tolerably common resident found in the densest forest growth of the dry hills or in the more open luxuriant growth along the small stream beds. A mated pair was seen on March 23 and following this other indications of the beginning of the breeding season were noticed. This flycatcher resembles a Wood Pewee superficially in both appearance and habits. Specimens were taken on March 18, 23, 25 and 27.

44. **Elainea martinica martinica** (Linnæus). ANTILLEAN ELAINEA. — This species seemed to be a migrant here as it was not found until March 25 after which it was more or less in evidence constantly in the proper localities. It has not been found by previous collectors on the island, a fact that strengthens the belief that it is migratory. The birds secured were ready to nest and were found in almost impenetrable thorny growths covering many of the dry hot slopes. Their strange habits were of great interest. One would sally out into the air after an insect and on returning to its perch remain motionless for a minute or two like a flycatcher. Then

in another instant it would begin to search the smaller limbs in vireo fashion or even climb about as a tufted titmouse might do. Numerically this species was small as not more than a dozen were noted on Vieques Island. Collecting specimens was a matter of considerable labor as, once heard, it was necessary to cut paths into the dense spiny growth in order to catch sight of the bird. And when one was shot a trail had to be cut in through the cactus and creepers to where it lay so that the few secured were hard earned. Birds were taken on March 25 and 27.

45. **Progne dominicensis** (Gmelin). CARIBBEAN MARTIN.— One or two pairs of Martins were seen around the town of Isabel II, but they did not spread into the country. This species does not winter here. Mr. Bowdish (1900, p. 74) says that a few were seen just before his departure from the island (Feb. 10, 1900); and this date may approximate the average date of their arrival, though in some years they may be found earlier.

46. **Margarops fuscatus fuscatus** (Vieillot). PEARLY-EYED THRASHER.— Resident. The *truche*, as it was called locally, was common in the thickets, frequenting the dry creek beds and the ravines especially. Its broken whistled notes were heard often while in the country and the birds, slipping away through the bushes, were a common sight. This species is large and robust in body and is hunted at times for food or game. Nothing was learned of its nidification. One male secured March 21 was a breeding bird but in twelve other males collected the sexual organs showed no signs of approaching physiological activity. No females were secured. Birds were taken March 18, 21, 27 and 29.

47. **Mimus polyglottos orpheus** (Linnæus). JAMAICAN MOCKINGBIRD.— A very common resident species. The dry brushy growth of Vieques Island seemed well suited to the needs of this bird and all through the pastures and fields it was common. The males sang constantly from the tops of the trees lifting their wings or flying from bush to bush with exaggerated movements to accentuate the handsome display of their snowy white alar markings. My visit coincided with the height of the breeding season and frequently a pair scolded harshly from the shelter of some thick bush only to slip slyly away on the opposite side when approached. A nest containing four young nearly a week old was seen on April 3. Many of these birds are kept as cagebirds in inclosures varying from the ordinary wire bird cage to a large calabash (*Crescentia cujete*) with the side cut out and string laced back and forth across the opening to retain the captive. The birds were fed in confinement on bananas, boiled eggs and cornmeal cooked without salt. Specimens were taken March 18, 20, 21, 22 and 30.

48. **Vireosylva calidris calidris** (Linnæus). JAMAICAN VIREO.— A summer visitant having a local distribution on the island probably due to the small number present and to the limited area inhabited by each pair during the breeding season. On the south coast these vireos were found in several localities but on the northern side they were noted only along one small gully. Specimens were collected on March 20, 22 and 25.

49. **Setophaga ruticilla** (Linnæus). REDSTART.— Fairly common as a winter visitant; more abundant during migration. Mr. Bowdish (1902–3, p. 19) noted redstarts on November 30, 1899, and I found them here until the time of my departure (April 4). On March 27 they were abundant.

50. **Seiurus motacilla** (Vieillot). LOUISIANA WATER-THRUSH.— A winter visitant. One or two were seen occasionally up to March 27. Mr. Bowdish (1902–3, p. 19) secured specimens on December 27, 1899, and January 22, 1900. Mr. A. B. Baker of the "Fishhawk" secured a female on February 7, 1899.

51. **Seiurus aurocapillus** (Linnæus). OVENBIRD.— A tolerably common winter visitant more common apparently during migration. Ovenbirds frequented the ground in sheltered areas in the dry thickets and when flushed went up into the bushes but in a few minutes dropped down and began feeding again. On March 19 and again on March 27 they were especially common. They were not observed after the latter date. One specimen secured was very pale in color. Birds were taken on March 19 and 20.

52. **Dendroica discolor** (Vieillot). PRAIRIE WARBLER.— A common winter visitant. Dry brushy areas seemed especially suited to these warblers. They were found feeding on the ground in the thickets or working quickly through the smaller branches. On March 19 and 27 they were especially common and were then in migration. Small flocks or single birds were observed during these days always working steadily to the westward. They were present in numbers to the time of my departure on April 4. Specimens were secured on March 19 and 25.

53. **Dendroica adelaidæ** Baird. ADELAIDE'S WARBLER.— A fairly common resident on Vieques Island. As noted previously (Wetmore, 1916, p. 103) this species was not known until 1912 outside of Porto Rico. The birds were locally common in the brush grown valleys on the northern side of the island and in the hot dry region of the south coast. They worked actively through the dense tangles of vines, the males giving their loud trilling songs frequently, but were difficult to locate. In the bushes they fed near the ground occasionally dropping down to the earth after an insect that had eluded capture in the limbs above. The first pair taken on March 20 were in worn breeding plumage but others taken later were in better condition, though all were breeding or about to do so. Others were taken on March 21 and 25. Specimens from Vieques Island differ in no way from the larger series secured on Porto Rico.

54. **Dendroica coronata** (Linnæus). MYRTLE WARBLER.— A tolerably common winter visitant. Mr. Bowdish (1902–3, p. 18) secured specimens on January 22 and 30, 1900, and I saw one in the town of Isabel II on April 1, 1912.

55. **Dendroica cærulescens cærulescens** (Gmelin). BLACK-THROATED BLUE WARBLER.— A male was observed but not taken on March 27, 1912. There is no other record for this bird. It probably occurs with more or less regularity during migration.

56. **Dendroica tigrina** (Gmelin). CAPE MAY WARBLER.— One was seen on April 4 in a flamboyant tree (*Poinciana regia*) in front of my temporary residence in Isabel II. It was not secured because of a regulation against shooting but was watched at close range for several minutes.

57. **Dendroica petechia bartholemica** (Sundevall). PORTO RICAN YELLOW WARBLER.— A common resident that occurred wherever trees or bushes offered it shelter. The scattered trees, trimmed symmetrically beneath by browsing cattle, growing in the upland pastures were favorite haunts; and many of these warblers came even into the town of Isabel II attracted by the shade trees growing along the streets. In spite of their yellow color and active movements it was difficult to see them in the leaves, constantly agitated by the trade winds. Specimens secured March 19 and 20 showed no enlargement of the sexual organs.

58. **Compsothlypis americana usneæ** Brewster. NORTHERN PARULA WARBLER.— A common winter visitant. During my stay on the island the spring migration was in full force and these birds outnumbered any of the other warblers. The blossoming *Muñeco* trees (*Cordia collococca*) with the many insects about the flowers were great attractions and around these trees the birds were especially common. The plumage at this season was perfect, the feathers showing a gloss or sheen. Specimens were secured on March 18 near Isabel II, on March 20 and 25 near Porto Ferro, on March 27 at Manuel Quí and on the twenty-ninth at Porto Ferro again. All are referred to the subspecies *usneæ* of Brewster. The birds were common until my departure on April 4.

59. **Mniotilta varia** (Linnæus). BLACK AND WHITE WARBLER.— Mr. Bowdish found this species during the winter on Vieques Island and Dr. Richmond (MS) saw a specimen in his collection collected January 30, 1900. I saw one on March 27 near Porto Ferro and another March 29 but secured no specimens.

60. **Cœreba portoricensis** (Bryant). PORTO RICAN HONEY CREEPER. — A common resident species not so abundant as in Porto Rico. Honey Creepers were found in the forest growths and in scattered groves of trees wherever there were suitable conditions but were rarely associated in numbers. A few were encountered along the borders of canefields and hedges of *maya* (*Bromelia pinguin*). The largest numbers gathered at the season of my visit in the *muñeco* trees (*Cordia collococca*) in whose blossoms they found an abundant supply of nectar, small insects and spiders. At the hotel in Isabel II one came in daily to search cut flowers placed in vases. A large mirror puzzled this bird greatly and it frequently perched before it to examine the bird and the room reflected in it, ending invariably in an attempt to enter. Always the bird on the other side came up to meet it and after trying to evade it first on one side and then on the other the bird would drop back and scold its reflection sharply with rapidly flitting wings. Several young birds still having a yellow superciliary were taken and adults, which from evidence gained by examining the sexual organs, were about to breed again. Skins from Vieques are apparently identical with those

from Porto Rico. Birds were taken on March 18, 19, 20, 22, 23, 25, 27, 29, and 30.

61. **Dolichonyx oryzivorus** (Linnæus). BOBOLINK.— Apparently a rare migrant. Gundlach[1] says that the Bobolink has been taken on Vieques Island and Cory (1892, p. 110) also reports it.

[**Icterus portoricensis** (Bryant). PORTO RICAN ORIOLE.— It would seem that the record for this bird given by Mr. Bowdish (1902–3, p. 12) was a *lapsus*. The same author remarks in the 'Oölogist' for 1900, page 73, that the Porto Rican Oriole was not found. Personally I could find no one to whom they were known on Vieques.]

62. **Holoquiscalus brachypterus** (Cassin). PORTO RICAN BLACKBIRD.— Resident. Though during his visit Mr. Bowdish (1900, p. 73) found this blackbird common and frequently associated in large flocks, in 1912 it was only tolerably common and was very local in its distribution. It seemed to prefer the more open regions immediately at the coast but one flock of half a dozen was seen in a dense thicket. Birds were secured on March 19, 21 and 29.

63. **Molothrus atronitens** Cabanis. GLOSSY COWBIRD.— Accidental. One is recorded by Newton (Ibis, 1860, p. 308) as obtained from Vieques Island by Mr. Riise of St. Thomas.

[**Tanagra sclateri** (Sundevall). PORTO RICAN EUPHONIA.— I was told that late in the fall of 1910 Mr. Reed then Presbyterian minister at Isabel II made an attempt to introduce this species into Vieques. Forty birds were purchased in Ponce and of these a dozen were accidentally released on the playa at Port Mulas as they were brought ashore. The others were kept in confinement but during the next few months escaped a few at a time. A few remained around Mr. Reed's house for some time and three months after the departure of the captives a flock of twelve was seen. Since this they have disappeared entirely.]

64. **Tiaris bicolor omissa** (Jardine). CARIB GRASSQUIT.— A common resident. A few of these grassquits were found in sheltered draws feeding on the ground under the bushes but the greater number were associated, fifteen or twenty together, with the other grassquits in grass-grown openings in the brush. When disturbed they flew up into the bushes and worked away ahead of me with soft call-notes or if I remained quiet dropped to the ground again to continue feeding. Though molting slightly birds taken seemed to be about to breed. Specimens were taken on March 18, 21, 22, 23, 25 and 27.

65. **Tiaris olivacea bryanti** (Ridgway). BRYANT'S GRASSQUIT.— A common resident. A few were found along the roads running through the cane but most of these grassquits were in mixed flocks with the preceding species. All of the specimens examined were undergoing a partial molt and there was no indication among them that the breeding season was near. Birds were secured on March 18, 22 and 23.

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[1] Ornithologia Cubana, 1893, p. 118.

THE SAW-WHET OWL OF THE QUEEN CHARLOTTE ISLANDS.

BY J. H. FLEMING.

LYING off the coast of British Columbia to the south of the Alaska boundary, the Queen Charlotte Islands have been investigated by naturalists in recent years, but seemingly without exhausting the possibilities of the interesting fauna. When Mr. Wilfred H. Osgood published in 1901, his account of the fauna of these islands, he described a Saw-whet Owl as *Nyctala acadica scotæa*,[1] basing the name on a single specimen collected in 1896, by the Rev. J. H. Keen, at Masset on Graham Island.[2] The differences noted between this form and true *acadica* were slight, but Mr. Osgood concluded that the birds of the humid Pacific coast region belonged to his new form and called it the North-west Saw-whet Owl, it was admitted to the 'A. O. U. Check-List,' with the range as "Puget Sound region, north to the Queen Charlotte Islands, British Columbia."[3] Thus the matter remained till 1914, when Mr. Ridgway in part six of 'The Birds of Middle and North America,' page 629, refused to recognize *scotæa*, and referred all the Saw-whets of North America to *acadica*, giving his reasons as follows. "The only peculiarities that I am able to observe in the type of *Nyctala acadica scotæa* consist in the deep ochreous buff auricular region and more reddish brown of the pileum; but I am of the opinion that these characters will not prove constant when more specimens from the Queen Charlotte Islands have been examined."

With these facts in mind I was surprised when Mr. J. A. Munro of Okanagan Landing, B. C., sent me word that he had four Saw-whet Owls from Graham Island that differed from any he had previously seen in British Columbia, these birds are now before me together with Osgood's type of *scotæa*, this type, and a Mexican skin have been lent to me by the Biological Survey through Mr. E. W. Nelson; besides these, the U. S. National Museum through Dr. C. W.

[1] North American Fauna, 21, p. 43.
[2] Type, ♂ ad. Biological Survey, No. 168171.
[3] Auk, 1902, p. 319.

Richmond has allowed me the use of four skins from the Pacific coast; and Mr. P. A. Taverner has sent me two skins from the Victoria Memorial Museum, Ottawa; these with fourteen Ontario skins from my own collection will be used in discussing the relationship between the type of *scotæa* and the other Queen Charlotte Island birds. Three of these are adult females, taken on the following dates in 1915, September 19, October 20, November 5, the fourth a juvenile male taken June 18.

An adult female (September 19) is colored as follows, underneath — between sayal brown[1] and tawny olive, the usual streaks are prouts brown, the whole producing a deep cinnamon effect; the superciliaries cinnamon buff, becoming clove brown on the ear coverts; the tarsi and toes are cinnamon buff; above — clove brown uniform except for the spots on the lower hind neck, which are cinnamon buff, the feathers of the forehead only with a few shaft streaks of the same color; the tail darker than the back, the usual spots are white, small, and often only present on the inner webb and each feather has a narrow white tip; the wings are like the tail but edged with prouts brown, the spots on the outer edges of the primaries are few, small, and are colored from cinnamon buff to lighter; the greater coverts have one spot of white visible, with smaller concealed ones, the spots on the secondaries are nearly white; the under wing coverts and bend of the wing are cinnamon buff. The October female is like the September one, but the November female is darker beneath, the prouts brown streaks are wider.

That the plumage just described is not sexual, is I think, proved by the juvenile male (in the so-called Kirtland's Owl stage) this is much darker everywhere, except for the white superciliaries, than an Ontario juvenile male of May 15. Above including the head uniform clove brown much darker even than the adult (almost sooty black), superciliary region and anterior portion of forehead clear white, the feathers of the latter bordered with clove brown, the ear coverts almost black; beneath — fore neck and breast clove brown, a little lighter in the middle; abdomen clear sayal brown; wings and tail as in the adult; tarsi sayal brown, the

[1] Ridgway, Nomenclature of Colors, 1912, is used throughout.

toes only partially feathered. The Ontario bird is natal brown above and on the breast, the abdomen cinnamon buff, the ear-coverts fuscous, superciliaries white, but not so clear as in the Queen Charlotte Island bird.

The type of *scotæa* is a very different bird from the adult females just described, and differs from comparable mainland specimens sufficiently to suggest that it might belong to a race subject to dioromatism. The reddish brown of the pileum and back is pronounced and forms a band across the interscapulary region, this depth of color is only approached by a bird from Queratero, Mexico,[1] and is much brighter than a male from Victoria, B. C.,[2] which in turn can be matched by Ontario birds; the auricular region in the type of *scotæa* is much more ochreous buff than either the Victoria or Mexican birds, and is not matched by any other birds before me; the tarsi and toes are cinnamon buff as in the dark females, while in the Mexican bird the toes are white and the tarsi only partially ochreous buff.

That the type of the North-west Saw-whet Owl is a stray, and does not represent the resident Queen Charlotte Island form is possible, though, as I have pointed out, it differs from mainland birds I have been able to compare it with, but against it are four birds that undoubtedly belong to a dark race, and if it should prove that the type of *scotæa* is not the light phase of this race the resident bird on the Queen Charlotte Islands would be without a name in which case I propose that it be called after Captain Allen Brooks, who has done so much for British Columbia ornithology.

Cryptoglaux acadica brooksi.

Type.— ♀ ad., Graham Island, Queen Charlotte Islands, British Columbia. September 19, 1915. No. 24629, collection of J. H. Fleming.

Saw-whet Owls from the Pacific Slope of British Columbia and Washington are ruddy brown in tone and these can be matched in my Ontario series, but Mr. Ridgway refers to a more grayish brown bird from the Rocky Mountain region, which may possibly

[1] ♂ ad. Sept. 10, 1896, Biological Survey, No. 155718.
[2] Feb. 29, 1893, U. S. Nat. Mus. No. 153206.

belong to a recognizable race, one bird from Rocklyn, Lincoln Co., Washington,[1] and one from Alix, Lacombe Co., Alberta,[2] are gray when compared with Ontario birds, and a series of inter-mountain birds might repay examination. Little can be deducted from measurements in the series before me, the Queen Charlotte Island birds are large, the wing averaging 5.53 in. in the three females, while five Ontario females average 5.40 in.

NOTE.— Since the above was written I have examined two more of the dark race, one of them a male.

A NEW FORM OF *CHLOËPHAGA HYBRIDA.*

BY JOHN C. PHILLIPS.

WHILE on an expedition to the Falkland Islands in the interest of the Museum of Comparative Zoölogy in 1915–16 Mr. W. S. Brooks obtained a series of *Chloëphaga hybrida* from West Falkland. This island form is larger in its several measurements than birds from the Straits of Magellan, and seems to be worthy of separation. It may be known as

Chloëphaga hybrida malvinarum subspec. nov.

Type from Port Stephens, West Falkland Isle. No. 70476 M. C. Z., adult ♂ collected 13th December, 1915, by W. Sprague Brooks.

Characters similar to *C. hybrida hybrida* from Patagonia and the Straits of Magellan, but larger, especially in length, depth and breadth of culmen. Pileum in the females, paler and more grayish; drab to light drab (Ridgway, 1912), instead of cinnamon brown. This character holds good for all five of the Falkland Island females and for the M. C. Z. series from the Straits of Magellan region.

[1] Jan. 1910, Vic. Memor. Mus. No. 5842.
[2] ♀ ad. Dec. 1914, Vic. Memor. Mus. No. 8730.

Remarks. Measurements are added. They show a constant, although small difference in the two regions for males as well as females. The great difference of the wing length between the females of *C. h. malvinarum* and *C. h. hybrida* is partly due to the fact that the series from Straits of Magellan are in worn plumage and have the primaries abraded.

It is possible that the lighter and more faded color of the pileum in the island geese may be due to age, and therefore will fail to hold as a constant character.

As so little is known about the seasonal movements of South American *Anatidæ* it is of interest to find these Falkland Island *Chloëphagae* distinct from those of the mainland.

Chloëphaga hybrida.

Falkland Island Series.

		Culmen	Depth Cul. at Base	Width Cul. at Base	Tarsus	Wing
♂	1099	39.	22.	21.	72.	382.
♂	1172	39.	23.	20.	74.	376.
♂	1171	40.	24.	22.	76.	383.
	Average	39.3	23.	21.	74.	380.
♀	1174	38.	22.	19.	67.	360.
♀	1173	36.	24.	19.	65.	361.
♀	1102	38.	21.5	20.	65.	376.
♀	1058	37.	21.	20.	71.	367.
♀	1274	37.	24.	20.	67.	368.
	Average	37.	22.5	20.	67.	366.

M. C. Z. Series, Straits of Magellan.

♂	M. C. Z.	23222	35.	22.	18.	71.	370.
♀	"	33180	36.	21.	19.	61.	360.
♀	"	7970	34.	19.	18.	60.	326.
♀	"	18413	34.	21.	17.	62.	338.
♀	"	18414	36.	20.	16.	61.	334.
♀	"	18415	34.	16.	19.	58.	356.
		Average	35.	19.4	17.4	60.4	343.

CHANGES IN THE A. O. U. CHECK-LIST OF NORTH AMERICAN BIRDS PROPOSED SINCE THE PUBLICATION OF THE SIXTEENTH SUPPLEMENT.

THE changes in the A. O. U. Check-List which have appeared from time to time in the several Supplements have originated in the publications of various ornithologists throughout the world, and have been considered by the Committee on Classification and Nomenclature, and accepted or rejected as the case may be.

The cases that come before the Committee are of two kinds:

(a.) Nomenclatural — cases which are easily settled by correspondence between the members of the Subcommittee on Nomenclature, all of these being governed by a definite Code of rules.

(b.) Ornithological — much more difficult cases involving the study of series of specimens and resting largely upon the personal opinion of the members, which may vary widely.

It was formerly the custom for the Committee to meet in Washington annually in April to dispose of accumulated cases. Of late years however, this has proven unsatisfactory as neither time nor material was available for the proper consideration of many proposed new forms based upon very slight differences. The following plan has therefore been adopted by the Committee in the consideration of ornithological cases.

To publish an annual list of proposed additions and alterations inviting study and criticism of them by ornithologists, whether members of the committee or not. In succeeding lists attention will be called to any publication endorsing or opposing changes or additions previously proposed, and it is hoped that in this way, the Committee may secure valuable assistance to guide them in reaching a decision, when a new edition of the Check-List is to be published, or at such time as it may be considered desirable to issue a Supplement.

In order to put this plan into operation the Acting Chairman

submits the following summary of changes and additions proposed since the publication of the 1910 edition of the Check-List and not considered in the Sixteenth Supplement,[1] exclusive of purely nomenclatural cases which, as explained above, are disposed of by the Subcommittee on Nomenclature. The list is probably incomplete but omissions can be added in subsequent publications.—WITMER STONE, *Acting Chairman Com. Classification and Nomenclature.*

I. ADDITIONS TO THE CHECK-LIST.

(a) Forms described as new, or rejected forms reëstablished.

Larus thayeri sp. nov. Ellesmere Land. Brooks, Bull. M. C. Z., LIX, No. 5, p. 373.

Puffinus puffinus bermudæ subsp. nov. Bermuda. Nichols and Mowbray, Auk, 1916, p. 195.

Æstrelata cahow sp. nov. Bermuda. Nichols and Mowbray, Auk, 1916, p. 194.

Histrionicus histrionicus pacificus subsp. nov. Pacific coast. Brooks, Bull. M. C. Z., LIX, No. 5, p. 393.

Oidemia deglandi dixoni subsp. nov. Alaska. Brooks, Bull. M. C. Z., LIX, No. 5, p. 393.

Ardea herodias treganzai Court.
" " **sanctilucæ** Thayer and Bangs.
" " **hyperoncha** subsp. nov. Pacific coast, Cal.
" " **oligista** subsp. nov. Santa Barbara Isl.

These four races recognized by Oberholser. Proc. U. S. Nat. Mus., 43, pp. 531–559.

Colinus virginianus taylori subsp. nov. Yuma Co., Col. Lincoln, Proc. Biol. Soc. Wash., May 27, 1915, p. 103.

Lophortyx gambelli sanus subsp. nov. Olathe, Colo. Mearns, Proc. Biol. Soc. Wash., XXVII, p. 113.

Dendragapus obscurus flemingi subsp. nov. Yukon Terr. Taverner, Auk, 1914, p. 385.

Bonasa umbellus thayeri subsp. nov. Digby, N. S. Bangs, Auk, 1912, p. 378.

Bonasa umbellus yukonensis subsp. nov. Yukon Terr. Grinnell, Condor, 1916, p. 166.

Lagopus leucurus altipetens Osgood, revived by Riley, Canad. Alpine Jour., 1912, p. 60.

Lagopus rupestris sanfordi subsp. nov. Tanaga Isl., Aleutian Chain. Bent, Smithson. Misc. Collns. 56, No. 30, p. 1.

Zenaidura macroura caurina subsp. nov. Oregon. Ridgway, Bds. N. and Mid. Amer., VII, p. 348.

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[1] 'The Auk,' 1912, pp. 380–387.

Buteo lineatus texanus subsp. nov. Corpus Christi, Texas. Bishop, Auk, 1912, p. 232.

Otus asio quercinus subsp. nov. So. California. Grinnell, Auk, 1915, p. 60.

Otus asio hasbroucki subsp. nov. Palo Pinto Co., Tex. Ridgway, Bds. N. and Mid. Amer., VI, p. 694.

Otus asio brewsteri subsp. nov. Salem, Oregon. Ridgway, Bds. N. and Mid. Amer., VI, p. 700.

Bubo virginianus neochanes subsp. nov. Newfoundland. Oberholser, Proc. Biol. Soc. Wash. XXVII, p. 46.

Bubo virginianus occidentalis Stone.
" " **icelus** (Oberholser).
" " **lagophonus** (Oberholser).

These three races revived by Ridgway, Birds of N. and Mid. Amer., VI.

Strix occidentalis lucida Nelson with which **S. o. huachucæ** Swarth is regarded as identical. Oberholser, Proc. U. S. N. M., 49, pp. 251–257.

Cryptoglaux acadica brooksi subsp. nov. Queen Charlotte Islands. Fleming, Auk, 1916, p. 422.

Glaucidium gnoma vigilante subsp. nov. Mountains of S. California and southern Sierra Nevada. Grinnell, Auk, 1913, p. 224.

Glaucidium gnoma swarthi subsp. nov. Vancouver Island. Grinnell, Auk, 1913, p. 224.

Glaucidium gnoma grinnelli subsp. nov. Humboldt Bay, Cal. Ridgway, Birds N. and Mid. Amer., VI, p. 791.

Micropallas whitneyi sanfordi subsp. nov. Lower California. Ridgway, Birds N. and Mid. Amer., VI, p. 809.

Micropallis whitneyi idoneus subsp. nov. Hidalgo, Texas. Ridgway, Birds N. and Mid. Amer., VI, p. 810.

Conuropsis carolinensis interior subsp. nov. Nebraska. Bangs, Proc. N. E. Zoöl. Club, IV, p. 93. [Applicability of *ludovicianus* of Gmelin for this race must also be considered.]

Dryobates pubescens microleucus subsp. nov. Newfoundland. Oberholser, Proc. Biol. Soc. Wash., XXVII, p. 43.

Dryobates pubescens glacialis Grinnell.
" **villosus leucothorectes** Oberholser.
" " **orius** Oberholser.
" " **icastus** Oberholser.
" " **sitkensis** Swarth.
" **scalaris eremicus** Oberholser.
" " **cactophilus** Oberholser.

Colaptes auratus borealis Ridgway.

Xenopicus albolarvatus gravirostris Grinnell.

Phlœotomus pileatus floridanus Ridgway.
" " **picinus** Bangs.

All the above 11, subspecies rejected or held in abeyance by the Committee are recognized by Ridgway, Birds of N. and Mid. Amer., VI.

Chordeiles virginianus howelli, subsp. nov. Texas. Oberholser, Bull. 86, U. S. Nat. Mus., p. 57.

Chordeiles acutipennis inferior subsp. nov. Lower California. Oberholser, Bull. 86, U. S. Nat. Mus., p. 109.

Mr. Ridgway (Birds N. and Mid. Amer., VI) endorses these two new races of Nighthawks.

Setochalcis gen. nov. for the Whip-poor-will as distinct from the Chuck-will's-widow; and,

Chordeilidæ fam. nov. for the Night Hawks. Oberholser, Bull. 86, U. S. Nat. Mus.

Corvus brachyrhynchos paulus, subsp. nov. Alabama. Howell, Proc. Biol. Soc. Wash., XXVI, p. 199.

Perisoreus canadensis sanfordi subsp. nov. Newfoundland. Oberholser, Proc. Biol. Soc. Wash., XXVII, p. 49.

Agelaius phœniceus aciculatus subsp. nov. Kern Co., Cal. Mailliard, Condor, XVII, p. 13.

Agelaius phœniceus nevadensis subsp. nov. Nevada. Grinnell, Proc. Biol. Soc. Wash., XXVI, p. 107.

Pinicola enucleator eschatosus subsp. nov. Newfoundland. Oberholser, Proc. Biol. Soc. Wash., XXVII, p. 5.

Loxia curvirostra percna subsp. nov. Newfoundland. Bent, Smithson. Miscel. Collns., 60, No. 15, p. 1.

Carduelis carduelis bermudiana subsp. nov. Bermuda. Kennedy, Bull. Brit. Orn. Club, CXCI, p. 33.

Melospiza melodia beata, subsp. nov. Enterprise, Fla. Bangs, Proc. N. E. Zoöl. Club, IV, p. 85.

Melospiza melodia acadica subsp. nov. Nova Scotia. Thayer and Bangs, Proc. N. E. Zoöl. Club, V, p. 67.

Pipilo maculata falcifer McGregor.

" " **curtatus** Grinnell.

" " **falcinellus** subsp. nov. Interior California. The first two rejected races reestablished and a new one described. Swarth, Condor, XV, No. 5, p. 168.

Pipilo erythrophthalmus canaster subsp. nov. Alabama. Howell, Proc. Biol. Soc. Wash., XXVI, p. 202.

Dendroica coronata hooveri McGregor.

Geothlypis trichas scirpicola Grinnell.

Hirundo erythrogaster palmeri.

Rejected races revived, Swarth, Univ. Cal. Publ. Zoöl. 10, No. 1, pp. 65–71.

Toxostoma redivivum sonomæ subsp. nov., Sacramento Valley, etc., Grinnell, Distributional List of Birds of Cal.

Nannus hiemalis semidiensis subsp. nov. Semidi Isl., Alaska. Brooks, Bull. Mus. Comp. Zoöl., LIX, No. 5, p. 400.

Salpinctes guadaloupensis proximus subsp. nov. San Martin Isl., Lower California. Swarth, Condor, XVI, No. 5.

Leucosticte tephrocotis dawsoni, subsp. nov. Sierra Nevada. Grinnell, Condor, 1913, p. 77.

(b.) Species which have been found within the limits of the Check-List.

Marila ferina (Linn.).
Marila fuligula (Linn.).
Cryptoglaux funerea funerea (Linn.).
Coccothraustes c. japonicus Temm. & Schl.
All four taken in the Pribilof Islands. Evermann, Auk, 1913, p. 15.
Dendrocygna viduata (Linn.), in New Jersey, G. B. Grinnell, Auk, 1913, p. 110.
Petrochelidon fulva pallida Nelson, in Texas, Bishop, Auk, 1910, p. 459.
Clangula clangula clangula (Linn.).
Fringilla montifringilla, Linn. Pribilof Islands, Hanna, Auk, 1916, p. 402.

II. Changes in Names.

(a) Due to the subdivision of species or subspecies and the restriction of the "typical" race to an extralimital range.

Gelochelidon nilotica becomes **G. n. aranea** Wils. Mathews, Birds of Austral., II, pt. 3, p. 329, confirms Coues (Proc. Acad. Nat. Sci. Phila., 1862, p. 536) that the North American form is distinct from the European.

Sterna caspia becomes **Hydroprogne tschegrava imperator** (Coues). Mathews, *do.*, p. 337. Again confirms Coues that the American bird is distinct. [Changes in generic and specific names are considered among nomenclature cases.]

Sterna anætheta becomes **Melanosterna anæthetus recognita** subsp. nov. Mathews, *do.*, pt. 4, p. 397. The American bird proves "different throughout" when compared with the typical form from the Philippines [changes in generic and specific names considered elsewhere].

Puffinus cuneatus becomes **P. pacificus alleni** subsp. nov. Mathews, *do.*, pt. 1, p. 83. *P. cuneatus* of the Marshall Islands is a subspecies of *P. pacificus* (Kermadec Isls.) but the American bird (from San Benedicto Isl.) is different from either.

Puffinus griseus is divided into **P. g. stricklandi** (Atlantic coast) and **P. g. chilensis** (Pacific). Mathews, *do.*, p. 96. True *griseus* is restricted to New Zealand and Australian seas.

Fregetta grallaria becomes **F. leucogaster** Gould. Mathews, *do.*, pt. 2, p. 39. These two species prove different upon examining the types. The latter is the bird referred to in the Check-List.

Phœbetria palpebrata = **P. p. auduboni** subsp. nov. Nichols and Murphy, Auk, 1914, p. 531.

Dafila acuta becomes **D. a. americana** Reich. Thayer and Bangs, Auk, 1916, p. 45. Confirm Reichenow, Orn. Monatsb. IX, p. 17, 1901, that the American and European birds are distinct. [The applicability of the name *tzitzihoa* Vieill. for this race is also involved].

Ægialitis hiaticula becomes **Æ. h. major** Seebohm. P. R. Lowe, Ibis, 1914, p. 395.

Squatarola squatarola becomes **S. s. cynosuræ** subsp. nov. Thayer and Bangs (Proc. N. E. Zoöl. Club, V, April 4, 1914) claim that the American bird differs from the European. Todd (Ann. Carnegie Mus., X, p. 146) fails to find constant differences.

Gallinula galeata becomes **G. chloropus cachinnans** subsp. nov. Bangs, Proc. N. E. Zoöl. Club, V, pp. 93–99. The North American bird is considered separable from that of South America (true *galeata*) and both regarded as subspecies of *G. chloropus* of Europe.

Callipepla squamata squamata becomes **C. s. pallida** Brewst. Bangs, Proc. N. E. Zoöl. Club, IV, p. 99.

Melanerpes formicivorus formicivorus becomes **Balanosphyra f. aculeata** Mearns. Ridgway, Birds N. and Mid. Amer., VI, p. 105. True *formicivorus* restricted to Mexico. [Generic name considered elsewhere.]

Dryobates scalaris bairdi becomes **D. s. symplectus** Oberholser. Ridgway, Birds N. and Mid. Amer., VI, p. 257. Endorses Oberholser in restricting true *bairdi* to Mexico.

Passer domesticus becomes **P. hostilis** Kleinschmidt, Falco, XI, No. 2, Dec. 1915. The English bird, from which our American birds are probably descended, is separated from the continental *P. domesticus*.

(b.) Species which are changed to subspecies.

Thalassogeron culminatus becomes **T. chrysostoma culminatus** Mathews, Birds Austral., II.

Oceanodroma kaedingi becomes **O. leucorhoa kaedingi** Willett, Auk, 1915, p. 301.

Somateria dresseri becomes **S. mollissima dresseri** Townsend, Auk, 1916, p. 291.

Aluco pratincola becomes **Tyto alba pratincola** Hartert, Vög. pal. Fauna, Heft VIII.

Otus xantusi becomes **O. asio xantusi** Ridgway, Birds N. and Mid. Amer., VI.

Atthis morcomi becomes **A. heloisa morcomi**.

Amizilis cerviniventris chalconota becomes **A. yucatanensis chalconota**, Ridgway, Birds N. and Mid. Amer., V.

Corvus caurinus becomes **C. brachyrhynchos caurinus**. Swarth, Univ. Cal. Publ. Zoöl. 10, No. 1, cf. also Rhoads, Auk.

(c) Subgenera raised to Genera or New Genera proposed.

Melanosterna
Phœbastria
Thalasseus
Hydroprogne
Onychoprion
Sternula

Mathews, Birds Austral., II. The first two are not even recognized as subgenera in the Check-List.

Oreopeleia
Chlorœnas
Patagiœnas } Ridgway, Birds N. and Mid. Amer., VII.

Hierofalco, B. O. U., List of British Birds.

Cerchneis, Chapman, Bull. A. M. N. H., XXXIV, p. 363. Cory, Field Mus. N. H., I, No. 9, p. 303.

Megaceryle } Miller.
Chloroceryle } Ridgway, Birds N. and Mid. Amer., VI.

Balanosphyra
Phrenopicus } Ridgway, Birds N. and Mid. Amer., VI.

Trogonurus
Nephœcetes } Ridgway, Birds N. and Mid. Amer., V.

Corthylio, Miller, Auk, 1915, p. 234.

III. Forms which it is proposed to reject.

Ixobrychus neoxenus, a melanistic phase of *I. exilis*. Bangs, Auk, 1915, p. 483.

Ardea herodias wardi.

Ardea wurdemanni, both of these are phases of *A. h. occidentalis*. Bangs, Auk, 1915, p. 484.

Falco rusticolus rusticolus

Falco r. gyrfalco Hartert considers all the American Gyrfalcons referable to *F. r. candicans* (N. A. and Greenland) and *F. r. obsoletus* (Labrador). Novit. Zool. XXII, pp. 167–185.

Strix occidentalis caurina = *S. o. occidentalis*. Oberholser, Proc. U. S. N. M., 49, p. 251.

Otus flammeolus idahoensis = *O. f. flammeolus*. Ridgway, Birds N. and Mid. Amer., VI.

Cryptoglaux acadicus scotæus = *C. acadicus*. Ridgway, Birds N. and Mid. Amer., VI.

Coccyzus minor minor = *C. m. maynardi*, so far as North American records are concerned. Ridgway, Birds N. and Mid. Amer., VII.

Phalænoptilus nuttalli nitidus = *P. n. nuttalli*. Ridgway, Birds N. and Mid. Amer., VI.

Uranomitra is united with *Amizilis*. Ridgway, Birds N. and Mid. Amer., V.

Melospiza melodia morphna = *M. m. rufina*. Swarth, Univ. Cal. Publ. Zoöl., 10, No. 1, p. 61.

Dendroica cærulescens cairnsi = *D. cærulescens*. Eifrig, Auk, 1915, p. 108.

Geothlypis trichas arizela = *G. t. occidentalis*. Grinnell, Publ. Zoöl. Univ. Cal., 12, No. 4, p. 202.

GENERAL NOTES.

Concerning the Occurrence of the Western and other Gulls in Southeastern Alaska.— In reviewing my recent paper on Alaskan birds in 'The Auk' (July, 1916, p. 335) the editor has found my notes on certain species of gulls to be indefinite. This is unfortunate, and it therefore seems desirable to present the facts in detail that the record may be clearly understood.

When we steamed out of Puget Sound, the ship was followed by a large straggling flock of gulls composed of four species; the Glaucous-winged, Western, Herring, and California Gulls. During the time we were in the Inside Passage and until we reached Ketchikan individuals of all these species were present. The birds were very tame and not only followed us but often flew abreast of the ship at about the height of the deck and within 20 or 25 feet of us, and frequently rested on the yards or davits. During these days much time was spent on deck watching and photographing them and their identification was made certain beyond any reasonable doubt, although no specimens were shot.

After the second day some of the Western Gulls began to drop behind and continued to do so until only four were left. These four remained with us until we anchored at Ketchikan. It is probable that some of the other species also left us, but this is not easy to prove as their places were taken by others, so that the total of our attendants did not vary much. As we neared Ketchikan a number of Ring-billed Gulls appeared and joined the others.

During the trip we occasionally passed other vessels, each of which had its following of gulls. It therefore appears probable that these birds pass up and down this coast more frequently than the limited number of records from the region seems to show.— F. Seymour Hersey, *Taunton, Mass.*

A Note on the Mottled Duck.— I want to correct a statement made by me in 'The Auk' (1912, p. 297) in which I compared a series of *Anas fulvigula maculosa*, from Brownsville, Tex., with a large series of Florida Ducks (*A. f. fulvigula*) and remarked that I could find no distinct difference between the two forms. In January, 1914, while paying a visit to Mr. E. A. McIlhenny, at Avery Island, Louisiana, I was able to collect a series of seven of the Mottled Ducks from the Vermilion Bay region. There are six adult males and one female. Taken as a whole this Louisiana series is even darker than the Texas series; the breasts of the males are very dark, glossy chestnut, and the ground color of the cheeks and chin is distinctly more rufous than in the Texas series or in the Florida series. The cheeks are also quite heavily streaked, and this streaking extends in all cases far below the superciliary stripe; in the Florida ducks the streaking of the cheeks is finer and does not extend so far ventrally on to the chin,

while the lores are plain buff and the chin itself is paler in all cases. The pilium of the Mottled Ducks from Louisiana is more solid black and less streaked black than is the case with the Florida birds; if anything it is darker than in the Texas birds. On the upper surface of the Louisiana series and the Texas series the light edges of all the feathers (back, scapulars, rump and tail) are darker and richer brown, but especially is this so in the Louisiana birds. The speculum character noticed by Sennett does not seem to me to hold good. It was said to be more green and less purple in *fulvigula* than in *maculosa*.

To sum up, I should say that the only character which seems important in distinguishing *A. f. maculosa* and *A. f. fulvigula*, aside from the generally darker tone of the former, is the coarser and more consistently striped head and neck of *A. maculosa*. In all cases the feathers bordering the sides of the culmen, the lores, are dotted with black in *maculosa* and plain buff in *fulvigula*. I believe the richer and more ruddy ground color of the head and neck of *A. f. maculosa* from Louisiana is partly due to the color of the water and mud in the Vermilion Bay region. These Vermilion Bay ducks are certainly more highly colored than ducks from the Brownsville region of Texas. The form *A. fulvigula maculosa*, therefore, will probably remain as a valid race.— J. C. Phillips, *Wenham, Mass.*

An Overlooked Specimen of the Trumpeter Swan.— When Mr. H. K. Coale was compiling the data on the Trumpeter Swan (*Olor buccinator*) for his paper in 'The Auk,' 1915, p. 82, I informed him that there were no specimens in the collection of the Philadelphia Academy. I recalled an old mounted specimen which was on exhibition when I first became connected with the museum but as no trace of it could be found I presumed that it had been wrongly identified. Recently, however, it has come to light having been boxed up with some other unmounted specimens. It is a typical adult specimen but unfortunately without data. The chances are, however, that it came from Delaware or Chesapeake Bays, as it bears evidence of having been mounted at the Academy.— Witmer Stone, *Acad. Nat. Sci., Philadelphia.*

Egrets (*Herodias egretta*) in Van Cortland Park, New York City. — Three individuals arrived on July 16 and have taken up their constant abode in the pond at Broadway and 242nd Street for the past week. They are attracting attention and admiration.

Great numbers of Kingfishers and Little Green Herons are also sharing the good fishing.— S. H. Chubb, *American Museum Nat. Hist., N. Y. City.*

The Black Rail (*Creciscus jamaicensis*) at Chicago, Ill.— A fine male of this species was shot May 30, 1916, while collecting at Hyde Lake, South Chicago, Ill. The skin is in the Harris Extension collection. The specimen was first flushed in a small cattail growth, and flew rather strongly

and at a good height for five or six rods before dropping back into the scant vegetation, which here stood in a foot or so of water. On going to the spot the bird flushed again, nearly underfoot, and was secured. The flight of this individual was fully as strong as that of Sora and Virginia Rails seen a short time previously. Mr. Charles Brandler, of the Field Museum, tells me that he saw a specimen of this rail in a hunter's string of birds, early in September, 1898, that was taken in this same locality. The owner, however, refused to part with it on learning it was different from the others.

The only previous Illinois records of which I am aware are those of Mr. E. W. Nelson (Birds of Northeastern Illinois, Bulletin of the Essex Institute, Vol. VIII, 1876, p. 134) who says, "During the spring of 1875 I saw three specimens in the Calumet Marshes. The first was observed early in May," and proceeds to give a good description of a nest and ten eggs found the same season near the Calumet River.— H. L. Stoddard, *N. W. Harris Public School Extension of Field Museum, Chicago, Illinois.*

Early Flight of Wilson's Snipe in Massachusetts.— On the afternoon of August 27, 1916, I saw at least 25 Wilson's Snipe, *Gallinago delicata*, along the Ipswich River in Topsfield, Mass. Mr. F. W. Killam reported about "three dozen" there the next day. These snipe were very wild and restless, continually flighting about the meadows in small flocks. A flight of snipe was reported at other points in Mass. the same week. So far as I can find out this is the earliest autumn record for any considerable number of this species in Mass.— J. C. Phillips, *Wenham, Mass.*

Eskimo Curlew in Massachusetts.— I am informed by Mr. E. H. Ives of Boston that a flock of about fifty Eskimo Curlew (*Numenius borealis*) was seen last spring (May 17, 1916) at Chub-Head Sands, near the mouth of the Rowley River between the towns of Ipswich and Rowley, Mass.

A letter to Mr. Ives from J. E. Short (not dated) says, "I should say there were fifty of them — they stayed around two days. Charles Bartlett saw them (also) and he said he had n't seen any for 15 years."

Both Short and Bartlett are "clammers" and have been experienced shore-bird gunners in the past. Mr. Ives has talked with both these men and others at Rowley and feels certain that there was no mistake in identification.— John C. Phillips, *Wenham, Mass.*

Note on the Nesting of the Valley Quail.— Mr. Fred M. Steele, of Los Angeles, Cal., sends me the following:— "Last spring a pair of California Valley Quail came down from the hills and were fed on our place for several days. They finally selected a flower box on my sleeping porch for a nesting site, and raised thirteen young, which are now (Aug. 23, 1916) full grown. Every morning about five o'clock they come to be fed on wheat which we put out for them, and we take great pleasure in feeding and watching them." — Henry K. Coale, *Highland Park, Ill.*

Incubation Period of the Horned Lark.— In connection with her school work, and with the help of the children under her instruction, the undersigned has studied the incubation period of the Horned Lark (*Otocoris alpestris leucolæma*) during the Spring just passed. The nest was within a few feet of the school house: it was discovered on May 4, and contained three eggs, and on May 5, it contained four eggs, after which date no more were laid.

On the morning of May 16, two eggs were completely hatched, and two were pipped, and by evening of the same day, all the eggs were fully hatched.

During the period of incubation the weather was most inclement, with frosts, snow, hail, and rain. If it be held that the first egg was laid on May 2 (a highly probable assumption), and that there was more or less incubation effect during the time of laying, the period of incubation may be estimated as being between 11 and 14 days: it was certainly not more than 11 (plus) days for the last egg.— Hazel MacDonald, *Dacono, Colo.*

Crows Destroying Quail.— According to my observation during the last twenty years, crows destroy tremendous numbers of the eggs and nestlings of our useful song birds. In fact, in my opinion, this destruction more than offsets what good they do in destroying injurious insects or vermin. I had never, however, until this past winter heard of Crows destroying Quail (*Colinus virginianus virginianus*), except when young, but a neighbor living near my place at Flowerfield, Suffolk County, Long Island, has reported that late last winter when there was a considerable fall of snow which covered the ground for ten days or two weeks, a flock of thirteen quail which wintered on his premises were all killed by crows. He frequently saw a considerable number of Crows following the bevy of quail, harassing them and tiring them out, and finally killing and eating them.— John Lewis Childs, *Floral Park, N. Y.*

Cassin's Sparrow in Colorado.— This species (*Peucæa cassini*) is rather uncommon in Colorado, and so far as the writer knows, the previous records are all from the plains eastward and southward of Denver. The only specimens heretofore secured by the writer, were taken at Sable, Colo., Aug. 16, 1913, and at Henderson, Colo., Aug. 24, 1913, the first named place being about twenty miles in an air line from the foot-hills of the Rockies, and this record is perhaps the nearest for this species to the mountains of this State. The writer recently secured (on June 4, 1916) a male in breeding condition, in Garver Canyon, about eight miles west of Sedalia, Colo., at an altitude of 7000 feet. If this species has not passed undetected heretofore in the foot-hills west of Denver, the present record would make it appear as if the species were latterly making its way westward into the mountains.— W. H. Bergtold, *Denver, Colo.*

Junco breeding at West Quincy, Mass.— On July 16, I noticed a male *Junco hyemalis hyemalis* at Fuller's Quarry, West Quincy, Mass. Mr. Winthrop S. Brooks of the Boston Museum of Natural History and Dr. Stanley Cobb were with me at the time and we followed him up, finding to our surprise that he had young in the vicinity, one of which we saw him feed.

It seems worth while reporting this instance of a Junco's breeding at this latitude, at an elevation not much over 200 feet, as we found the past records were very scanty.— N. C. Foot, M. D., *Milton, Mass.*

Multiple Nest of the Yellow Warbler.— On June 1, 1916, on the bank of the Red River of the North near Wahpeton Indian School I found a finished nest of the Yellow Warbler in a rather uncommon position. The nest was situated about twelve feet high on the trunk of a large willow tree; where the nest was found the tree was twelve inches in diameter. June 6 I again went to the place and found a new nest finished on top of the first one. There were still no eggs. June 13 I again visited the nest and found nest No. 3 added on top of the other two, but still no eggs. June 25 I again visited the nest and found nest No. 4 added and containing one egg of the Yellow Warbler. Dimensions of the nest were then: inside diameter two inches; depth of nest one inch; outside dimensions, diameter three inches; height of the four nests combined ten and one-half inches.

June 28 a very heavy storm came up and did a lot of damage. Of twelve nests I had located not one survived. On the 29th I went to collect nests and eggs of the Yellow Warbler. I saw that nests No. 3 and No. 4 were blown down and probably had fallen into the river, for I could not locate them anywhere. By examining the two remaining nests I found that No. 2 fitted very snugly in the cup of No. 1 but was not connected with it, so that I could lift it out very easily. Nest No. 1 contained two Cowbird's eggs. They were very different in coloring and size so I believe that two Cowbirds must have visited and imposed on the Yellow Warbler. Imbedded in the bottom of Nest No. 2 I found one egg of the Yellow Warbler. Nest No. 2 contained one Cowbird's egg, and on the ground under the nest I found one more Cowbird's egg. All of the Cowbird's eggs were distinctly different in coloring, so at least four different birds must have visited the nest.

I am only sorry that I lost the opportunity to examine nests No. 3 and No. 4 and collect the whole structure intact.— Jens K. Jensen, *United States Indian School, Wahpeton, N. D.*

Warbler Notes from Rhinebeck, N. Y.— One of the most remarkable features of the past spring migration has been the abundance of the rarer warblers. My notes are based on daily observations made over an area of about two hundred and fifty acres of mixed woodland, lawns and marshy ground. The species of warblers to which I wish to make especial refer-

ence are the Blackburnian, Cape May, Tennessee, Bay-breasted and Wilson's Warblers.

Contrary to the usual dates, the Blackburnian Warbler has arrived in the past three years on April 29, May 5 and May 1, respectively. This year the height of its migration was reached on May 19, when eight were observed. It was last seen on the 29th. The Cape May Warbler also has been coming ahead of schedule time, on May 4, 8 and 2. In 1916 it was pretty steadily present until the 27th and five were observed on three occasions.

But the most remarkable increase has been shown by the Tennessee Warbler. Up to 1915 I had only one spring and one autumn record of the species. In 1915 it was observed several times from May 6 to 20, three being recorded on the 19th. In 1916 it did not arrive until the 10th, but immediately became the most conspicuous and constant songster of the entire family, as many as half a dozen answering each other from adjacent tree-tops. The climax of its migration was reached on May 22, when sixteen were recorded and it remained common until the 29th. One straggler was observed on June 2.

I usually see not more than five or six Bay-breasted Warblers in a season, but this year they were constantly present from May 11 until the 29th, twelve being recorded on the 19th. Wilson's Warbler also arrived on the 11th and stayed till the 29th, singing freely and as many as four being seen on two different days.

One other unusual occurrence was a visit from a Blue-winged Warbler in full song on May 19, as Dutchess County is beyond the normal range of this species. The 19th of May marked the turning point of the warbler migration and twenty-three species were noted on that day.— MAUNSELL S. CROSBY, *Rhinebeck, N. Y.*

Mockingbird (*Mimus polyglottos polyglottos*) in Wayne County, Michigan.— Authentic records of the Mockingbird in southern Michigan are extremely rare. The first known Wayne County record is that of Mr. J. Claire Wood who found a pair breeding on Aug. 13, 1910, in Ecorse Township, the nest containing three young ('Auk,' 1911, 269). This locality is but a few miles from Grosse Ile where the second record was established. Mr. George Thrall had a Mockingbird that remained practically throughout the summer of 1913 on his grounds on the eastern side of Grosse Ile. The bird was first noticed early in May, and had the habit of singing vigorously from the peak of the barn, especially during the early mornings. He was not aware as to whether it nested or not. From a long residence at New Orleans Mr. Thrall is perfectly familiar with the species.

Major A. H. Boies wrote Prof. W. B. Barrows Aug. 6, 1906, from Amherstburg, Ont. "that a man there took a nest of the Mockingbird (presumably during that year)." Amherstburg is directly across the Detroit River from the lower portion of Grosse Ile. It has been detected several

times at Pt. Pelee, Essex Co., Ontario, and apparently nested there.— BRADSHAW H. SWALES, *Ann Arbor, Mich.*

The Carolina Wren in the Maine Wilderness.— Late in June I visited the Fish and Game Preserve of the Megantic Club which is located in northwestern Maine, and extends from Beaver Pond, about twenty-five miles north of the Rangeley Lake, to Lake Megantic in Quebec. A large part of this is primeval forest, a clearing having been made only for the accommodation of camps, and little or no lumbering has ever been done on the preserve.

I reached Beaver Pond about noon of June 21st, and almost the first bird song I heard was that of the Carolina Wren. I did not succeed in seeing the bird, but one who is familiar with the song in the South, and has heard it in New Jersey, and two or three times on Long Island, cannot mistake it, even in the Maine woods.— JOHN LEWIS CHILDS, *Floral Park, N. Y.*

Notes from Wisconsin.— Bonasa umbellus umbellus. RUFFED GROUSE.— The crops of ten Ruffed Grouse taken in Chippewa County Nov. 25-28, 1915, were examined and seven found to contain largely the pods of the vine *Amphicarpæa* — "Hog Peanut." This vine was very plentiful in the region trailing over the bushy growth in the burned areas. The "crop statistics" of one of the birds, which contained all the kinds of food noted in the others, is as follows:

37 pods of *Amphicarpæa*
130 seeds " "
105 small reddish leaf buds
17 seeds of *Desmodium*
36 leaflets of clover (green)
3 leaflets of strawberry (green)
1 leaf of wintergreen
1 berry of wintergreen
The remains of an insect and one small pebble

Spizella pallida. CLAY-COLORED SPARROW.— Clay-colored Sparrows were found to be quite abundant in the vicinity of Friendship, Adams County, July 4, 1915, and one nest with four eggs was located. The land is flat and the soil sandy with a very patchy growth of jack-pines occasionally mixed with black oaks. The open patches are partly bush grown and partly grassy. Farms were not plentiful in the region visited. The combination of open places and woods made bird-life very plentiful and it was interesting to find the Chipping, the Field and the Clay-colored Sparrows all numerous in one locality.

Thryothorus ludovicianus ludovicianus. CAROLINA WREN.—One bird was seen near Madison July 18, 1915.

Planesticus migratorius migratorius. ROBIN.— An albino robin that was reported to have spent the summer near the campus of the University of Wisconsin was seen Oct. 12, 1915, about two weeks before the last large flock of migrating robins was noted (flock of 35 on Oct. 30). In the spring of 1916, an albino robin was noted in the same vicinity on

March 29 about two weeks after the first spring migrants were seen. Large flocks of migrating robins were still about by April 16. This note is recorded in the belief that it furnishes some evidence that the first arrivals among the spring migrants are the summer residents and the late migrants those bound for more northern localities. NORMAN DEW. BETTS, *Madison, Wis.*

Birds with Accessory Wings.— The recent interesting article on "A Four-winged Wild Duck" (Auk, October, 1915) caused the undersigned to search for some references on this deformity, references he remembered having read many years ago, and he recently found them in J. Bland-Sutton's 'Evolution and Disease' (1890), in which work is given an illustration of a Dove with an accessory wing, together with several other examples of dicotomy in other animals. This note is published in order that future workers in avian pathology may not overlook this valuable article of Sutton's.— W. H. BERGTOLD, *Denver, Colo.*

Pseudo-masculinity in Birds.— The undersigned recently secured a Spurred Towhee (*Pipilo maculatus montanus*) which is of more than ordinary interest. The skin is in the plumage of a male, though the black of the head and throat has a faint brownish cast by reflected light. The bird proved, however, on dissection, to be a female, with a normal ovary, containing ova in various stages of development. It has been held by various writers (vide, Sutton, 'Evolution and Disease') that, with dimorphic species (dimorphism between the sexes) the assumption of the male dress by the female bird, is always accompanied by an atrophic or, otherwise, diseased condition of the ovary. If this be true the case now reported is an exception, unless this rule does not apply to all birds, but only to the domestic hen, and to pheasants, in which species, Sutton clearly detected this relation between the diseased ovary, and pseudo-masculinity. The undersigned does not know how much is to be found on this question in general ornithologic literature. Sutton cites the following species as exhibiting pseudo-masculinity; — "Pheasants (Common, Golden, and Silver), Domestic Hen, Pea-fowl, Partridge, Bustard, American Pelican, Wild and Domestic Ducks, Cuckoo, Cotinga or Bellbird, Bunting, and Chaffinch," but does not state whether or not diseased ovaries were found in all these cases.— W. H. BERGTOLD, *Denver, Colo.*

RECENT LITERATURE.

Chubb's 'The Birds of British Guiana.' [1]—One of the most notable ornithological publications of the year is the first volume of Chubb's 'Birds of British Guiana.' This work is gotten out by Mrs. F. V. McConnell as a memorial to her late husband, and is based mainly upon the collections made by him during numerous visits to the Colony, where he had extensive interests. On two occasions, in 1894 and 1898 Mr. McConnell made extended trips to Mt. Roraima in the interior, so that his collection contained nearly all the species known from British Guiana. At the time of his death in 1914 he was engaged with Mr. Chubb in making a catalogue of the specimens which he proposed to publish as a contribution to our knowledge of the geographic distribution of the birds of this portion of South America. In following out his plan, Mrs. McConnell wisely decided to extend the scope of the work, to include all species known from the Colony and to draw when necessary upon other collections and previous publications, in order to make the work as complete an account as possible of the birds of British Guiana.

In asking Mr. Chubb to prepare the work she could not have made a better choice, while the publication of her husband's journal of the 1894 Roraima trip as an introduction adds much to the general interest of the volume. This first volume covers all the groups with the exception of the Passeres and treats of 349 species. Under each species are given a reference to the original place of publication of the name, and a synonymy of British Guiana references. Then come descriptions of the adults and young, and paragraphs on the 'Breeding Season,' 'Nest,' 'Eggs,' 'Range in British Guiana,' 'Extralimital Range' and 'Habits.' In many cases little or nothing is known concerning various of these subjects and this fact is stated, thereby indicating clearly what information is still a desideratum. While Mr. Chubb modestly states that the work is not intended to be a monograph of the birds of British Guiana, he seems to be thoroughly familiar with the literature of the subject and to have searched it exhaustively and with good judgment, in compiling the data that he presents.

In stating the range in British Guiana, all the localities represented in the McConnell collection are listed, as well as additional ones published by others, which is the only thoroughly accurate way of working out geographical distribution. The colored plates by H. Grönwold present

[1] The Birds of British Guiana. Based on the collections of Frederic Vavasour McConnell Camfield Place, Hatfield, Herts. By Charles Chubb, F. Z. S., M. B. O. U., Zoological Department, British Museum. With a Preface by Mrs. F. V. McConnell. Vol. I. London: Bernard Quaretch, 11 Grafton Street, W. 1916. Royal 8vo. pp. i–liii + 1–528, colored pll. I–X, map, numerous text figures, frontispiece portrait and 16 half-tone plates of scenery, natives, etc. Edition limited to 250 copies. Price of Vol. I, £2. 2s. net.

attractive portraits of some of the more interesting birds of the Colony, while the 95 text figures illustrate structural characters of many of the genera.

The classification is the same as that followed by Brabourne and Chubb in their 'List of the Birds of South America,' but the nomenclature has been revised where further research rendered it necessary. Three forms are described as new, from specimens in the McConnell collection, viz.: *Ortygops notata duncani* (p. 74), Abary River, *Creciscus melanophæus macconnelli* (p. 75), Bonasika River, and *Ciccaba superciliaris macconnelli* (p. 290) Ituribisi River.

Judging by the first volume Mr. Chubb's book is most welcome, and will be of the greatest value to students of neotropical birds, as well as to the general reader who wishes to ascertain what is known of the habits of the birds of this part of South America.

The recent activity in the study of the birds of this great southern continent has resulted in such a flood of descriptions of supposed new subspecies that to those not in the closest touch with the work, the whole subject seems a maze. A work, therefore, of the kind before us which brings together all the data bearing upon a particular area, and presents it in a systematic manner, seems especially timely.

The typography of the volume is good and we congratulate both Mr. Chubb and Mrs. McConnell upon the excellence of the work that they have brought out.— W. S.

Chapman's 'The Travels of Birds.' [1] — Dr. Chapman's latest contribution to popular ornithology is a little text book on bird migration entitled 'The Travels of Birds,' illustrated by text cuts by E. J. Sawyer. The twelve chapters bear the following headings which indicate pretty clearly the subjects which are considered: 'Birds as Travellers'; 'Preparing for the Journey'; 'First Flights'; 'The Bird's Air Line'; 'The Bird's Time-table'; 'The Day Flyers'; 'The Night Flyers'; 'The Travels of the Bobolink'; 'Some Famous Bird Travellers'; 'The Dangers on the Way'; 'The Bird's Compass'; 'Why Birds Travel.' The style is clear and devoid of all technicalities while the information presented is based upon the author's wide experience and upon the writings of other ornithologists, notably those of the late Wells W. Cooke, to whose memory the little volume is appropriately dedicated. Each chapter concludes with a series of questions bearing upon the subject just considered, entitled 'Suggestions for Study.' The book will form an admirable one for nature study classes in schools or elsewhere, and will give the general reader a clear, 'up to date' knowledge of one of the most interesting phenomena of bird life.— W. S.

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[1] **The Travels of Birds. Our Birds and their Journeys to Strange Lands. Frank M. Chapman. The Bird's Historian. New York and London. D. Appleton and Company. [1916]. 12mo. pp. 1–160. Cloth. 40 cents net.**

Sawyer's 'Land Birds of Northern New York.'[1] — This neat little booklet is another attempt to make easy the task of identifying birds on the part of the beginner. Every author has his own ideas as to how this may best be accomplished, and all meet with a measure of success, although probably none fulfill their expectations. Mr. Sawyer's ability as an artist has enabled him to supplement his brief descriptions by figures of a large number of the species, which aid materially in their identification, although the text paper used by no means does justice to the half-tones. The species are arranged in a number of artificial groups, which unfortunately are not mutually exclusive: *i. e.* 'Brightly Colored Birds'; 'Birds Distinctly Marked'; 'Birds of Robin Size or Larger (not in foregoing groups).' While the Rose-breasted Grosbeak is placed in the first, and the Bobolink in the second, we should regard one as distinctly marked as the other, and we surely should hardly expect to find the Wood Thrush in the 'Distinctly Marked' group, when the Thrasher falls in the 'Robin Size or Larger' section. The main fault in these artificial schemes is that females and immature birds, where they differ from the adult males, are left entirely out of consideration in the grouping. Shortcomings of this sort are however, common to all books of this kind, and are difficult to overcome in a 'pocket guide.' Mr. Sawyer's little book contains much information in a very compact form and will doubtless aid many beginners to name the birds about them.— W. S.

Summer Birds of the Douglas Lake Region, Mich.[2] — Mr. N. A. Wood has compiled an annotated list of 128 species of birds observed in the Douglas Lake region of Michigan which has been published by the University of Michigan. It is based upon his own observations in 1915, those of Prof. Smith and Dr. Gates in 1911, and a published list by J. S. Compton. An introduction discusses the physical features of the locality and the ecological distribution of the birds. We note *Helodromas solitarius cinnamomeus* and *Colaptes auratus auratus* listed without comment, but as Michigan is far out of their range we presume that *H. s. solitarius* and *C. a. luteus* are intended, as suggested by the English names. *Dryobates pubescens* should also probably be *D. p. medianus*, while the occurrence of two races of Ruffed Grouse together, apparently at the same season, seems open to question.— W. S.

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[1] Land Birds of Northern New York. A Pocket Guide to Common Land Birds of the St. Lawrence Valley and the Lowlands in General of Northern New York. By Edmund J. Sawyer. Illustrated by the Author. Published under the Auspices of the Watertown Bird Club. May, 1916. 12mo., pp. 1–90. 1 colored plate and numerous half-tone text figures. A. C. Rogers, 325 Jay St., Watertown, N. Y., paper, 35 cts., cloth 50 cts., postpaid.

[2] The Summer Birds of the Douglas Lake Region, Cheboygan County, Michigan. By Norman A. Wood, Frank Smith and Frank C. Gates. Occas. Papers Mus. Zoöl. Univ. Mich., No. 27. May 15, 1916.

An Index to 'Bird-Lore.'[1] — To those who have had occasion to compile information upon any species of bird or upon the birds of any State the need of an index to 'Bird-Lore' has at once been apparent. Only by going over the index or contents of each volume separately could the vast store of data contained in this journal be made available. We were therefore prepared to welcome any general index that might appear and the one that has been compiled by Mr. Ernest Ingersoll and published by the National Association of Audubon Societies, will doubtless meet the requirements of the majority of those who will use it. Unfortunately, however, when compared with the two indexes to 'The Auk' compiled respectively under the direction of Drs. Jonathan Dwight, and Theodore S. Palmer, it falls far below their standard of excellence.

A perusal of a few pages shows an evident lack of system in the compilation. Of two titles 'Photographing a Ruffed Grouse' and 'Photographing a Virginia Rail' for example, one is indexed under 'photographing' the other under 'Virginia,' though we find references also under 'Grouse' and 'Rail.' Two others, 'A Crow Study' and 'A Hermit Thrush in Winter' appear respectively under 'a' and 'Hermit,' and we fail to find the latter under 'Thrush' where the other references to the species occur. While it is the evident intention to index each article under the author and the bird of which it treats, we find that in many cases one reference or the other has been omitted. However indexes are thankless jobs and the present one will answer the purposes of the majority of those who use it, and be a great help to all. But it seems unfortunate that where so much effort has been expended, a little more care was not exercised. A series of page references to papers relating to the birds of each State and country would also have been a welcome addition.— W. S.

A Bibliography of British Ornithology.[2] — For thirty-six years the only work dealing solely with the bibliography of British Ornithology has been the fourth installment of Dr. Coues' famous 'Ornithological Bibliography.' The present work by W. H. Mullens and H. Kirke Swann is much more pretentious than that of Dr. Coues and is arranged on a different plan. It contains biographical sketches of most of the authors, which

[1] An Index to Bird-Lore. Volumes I to XV, inclusive, containing a Reference to Every Contributor, Article and Topic; an Analytic Index to the Colored Plates and other Illustrations; and an Index to Books and Periodicals Reviewed. Compiled by Ernest Ingersoll. For sale by the National Association of Audubon Societies, 1974 Broadway, New York City. 1916. Price 50 cents.

[2] A Bibliography of British Ornithology from the Earliest Times to the End of 1912. Including Biographical Accounts of the Principal Writers and Bibliographies of their Published Works. By W. H. Mullens, M. A., LL.M., F. L. S., M. B. O. U. and H. Kirke Swann. "Let no man who writes a book presume to say when he will have finished. When he imagines that he is drawing near to his journey's end, Alps rise on Alps, and he continually finds something to add and something to correct." MacMillan and Co., Limited, St. Martin's Street, London. 1916. 8vo. Pt. 1. pp. 1–112, 6/net. To be completed in about six bi-monthly Parts.

are arranged alphabetically, the papers of each author following the sketch in chronological order. The amount of data that the authors have gathered together is enormous, and historians and biographers in general will find this work a veritable mine of information. Ornithologists are seldom narrow, and we find that most of the authors here enumerated were noted in other fields as well. William Bullock whose name is ever associated with the early collections of Mexican birds, is listed as a 'naturalist, collector, traveller, antiquary, auctioneer and showman' while he describes himself on the cover of his 'Museum Companion' as 'Silver-Smith, Jeweller, Toyman and Statue Figure Manufacturer.'!

In addition to the account of Bullock, American ornithologists will find facts of interest in the sketch of Capt. Thomas Brown, publisher of the 'Illustrations of American Ornithology,' and 'Game Birds of North America,' two of the rarest of American ornithological works, while the biographers of Thomas Bewick and Daines Barrington will attract many. We shall look with interest for the succeeding parts of this important work,—a work that should be in all reference libraries.— W. S.

Todd on Dysithamnus mentalis.[1] — In this paper Mr. Todd has presented a painstaking monograph of a difficult genus of Formicariidæ including detailed descriptions, full synonymy, maps showing the distribution of the species, lists of specimens, and extracts from literature relating to habits, etc. In all respects this is a model piece of work and one which could well be followed by other writers. Five species of the genus are recognized: *D. mentalis* (divided into five races), *semicinereus*, *extremus*, *affinis* (three races) and *andrei*. The new forms are *D. m. æquatorialis* (p. 539), Zaruma, Ecuador, *D. m. lateralis* (p. 540), Guarico, Venezuela; and *D. extremus* (p. 549), Cauca, Colombia.— W. S.

Cherrie on New Neotropical Birds.[2] — Mr. Cherrie describes ten new South American birds from the collections of the American Museum of Natural History. Two of these were secured by S. M. Klages in Venezuela: *Hemithraupes flavicollis aurigularis* (p. 389), Suapure; and *Argicus macrodactylus caurensis* (p. 389), La Union. One was obtained in the Orinoco Delta by Dr. Rusby: *Piaya rutila orinocensis* (p. 393); while the rest were all collected by Mr. Cherrie himself on the Collins-Day Expedition, viz.: *Xiphorhynchus guttata rimarum* (p. 391), Rio Espirito Santo, Bolivia, *Taraba major virgultorum* (p. 391), *Capito auratus insperatus* (p. 391), *Piaya rutila chaparensis* (p. 392), and *Hypocnemis collinsi* (p. 395), all from Todos Santos, Bolivia; *Drymophila phantatis* (p. 396), Cocha-

[1] On Dysithamnus mentalis and its Allies. By W. E. Clyde Todd. Bull. Amer. Mus. Nat. Hist. XXXV, pp. 533–560. August 10, 1916.

[2] Two New Birds from Venezuela. New Birds from the Collection of the Collins-Day Expedition to South America. By George K. Cherrie. Bull. Amer. Mus. Nat. Hist., XXXV, pp. 389 and 391–398.

bamba, Bolivia; *Capito dayi* (p. 394), Rio Madeira; *Crocomorphus flavus inornata* (p. 395), Santarem, Brazil, and *Formicivora rufa chapmani* (p. 396), Altar do Chao, Brazil.— W. S.

Cory on New South American Birds.[1]— Further study of the collections of the several South American expeditions of the Field Museum has brought to light 26 apparently new forms which are described and named by Mr. Cory in the pamphlet before us. They were obtained mainly in Brazil and Peru by Messrs. Osgood, Anderson and Becker but *Pachyrhamphus niger tobagensis* (p. 343) is described from Tobago, *Cistothorus platensis tamæ* (p. 344) from Paramo de Tama, Ven., and *Coryphospingus pileatus brevicaudus* (p. 345) from Margarita Island.— W. S.

Riley on New Ralliformes.[2] — Mr. Riley describes as new two birds from the collection of the U. S. National Museum; one a Coot from Grenada, *Fulica americana grenadensis* (p. 103), the other a small Rail, *Creciscus murivagus* (p. 104), from Lima, Peru.— W. S.

Mathews' 'Birds of Australia.'[3] — The present parts of Mr. Mathews' work conclude the Hawks and the Owls. Much controversial discussion on nomenclature and the recognition of races is presented, and the following new forms are proposed, viz.: (Part III) *Ieracidea berigora tasmanica* (p. 276); *I. b. kempi* and *centralia* (p. 277) and *Spiloglaux novæseelandiæ everardi* (p. 332); as well as a new genus *Berneyornis* (p. 305) for *H. athene strenua* Gould. Part IV contains an elaborate discussion of the Australian and other Barn Owls and *Megastrix tenebricosa perconfusa* (p. 408), British New Guinea, is described as new.— W. S.

Buturlin's Review of the Nuthatches.[4]— In his studies of this family extending over ten years Mr. Buturlin comes to the conclusion that it is not so homogeneous as generally supposed and proceeds to separate it into three subfamilies, *Daphænosittinæ*, comprising *Daphænositta* and *Neositta; Cyanosittinæ* comprising *Pœcilositta* gen. nov. (p. 149) for *Dendrophila* Sw. preoccupied and *Cyanositta* gen. nov. (p. 149) type *Dendrophila corallipes* Sharpe; and *Sittinæ*, comprising *Callisitta, Arctositta* gen. nov. (p. 151), type *Sitta arctica* But., *Sitta, Mesositta* gen. nov. (p. 152), type *S. himalayensis* Jard. & Selby, and *Rupisitta*.

[1] Descriptions of Apparently New South American Birds, with Notes on Some Little Known Species. Field Museum of Natural History, Publication 190, Ornith. Series. Vol. I, No. 10. August 30, 1916. pp. 337–346.

[2] Two new Ralliformes from Tropical America. By J. H. Riley. Proc. Biol. Soc. Wash. XXIX, pp. 103–104, June 6, 1916.

[3] The Birds of Australia. By Gregory M. Mathews. Vol. V, Part III, pp. 249–352. May 27, 1916, Part IV, pp. 353–439, August 30, 1916.

[4] A Short Review of Nuthatches (Fam. Sittidæ). By S. A. Buturlin, Travaux de la Soc. Imp. Nat. Petrograd, XLIV, livr. 2, pp. 145–173. 1916.

The genus *Sitta* is separated into four subgenera. *Homositta* subgen. nov. (p. 152) type *S. castaneoventris* Frankl.; *Micrositta* subgen. nov. (p. 153) type *S. villosa* Verr.; *Leptositta* subgen. nov. (p. 153) type *S. leucopsis* Gould, and *Sitta* type *S. europæa* L.

Our *Sitta carolinensis* is arranged in subgenus *Leptositta*, while all our other North American species fall in *Micrositta*. No less than 22 races of *Sitta europæa* are recognized! This paper is evidently the result of much study and deserves careful consideration.

The following new forms are described: *S. europæa sakhalinensis* (p. 158), Saghalien Isl.; *S. e. hondoensis* (p. 160), Hondo Isl.; and *Rupicitta tephronota iranica* (p. 165) N. E. Persia.— W. S.

Dabbene on Argentine Coots and Grebes.[1]— In this interesting paper Mr. Dabbene describes the life histories of *Fulica armellata*, *F. rufifrons*, *Podiceps americanus* and *Podilymbus podiceps*. The nests and eggs are described and figured as well as the plumages of the young nestlings. A series of skins of *Fulica armillata* shows a gradual transition from a blackish downy nestling to a white-breasted juvenal plumage and finally to the slaty adult dress.— W. S.

Birds in Relation to the Dissemination of Mistletoes in the United States.— It is a relief to learn from two recent publications[2] on western mistletoes that birds are held to play only a minor rôle in the distribution of these destructive plants. The mistletoes considered are those of the genus *Razoumofskya*. The seeds are expelled from the capsules with such force that they have been observed to travel 66 feet with a fall of only 8 feet; aided by strong winds seeds from high trees are known to have carried a quarter of a mile. It is evident that the plants have no real necessity for animal carriers and it is stated by the author that the part played by birds is a minor one.

English sparrows and grouse have been observed to feed upon the seeds and they undoubtedly aid in dissemination of the plants. Both birds and rodents build nests among the mistletoes thus adding to the possibilities of seed distribution. The efficiency of these agents is limited, however, and Dr. D. T. MacDougal states that "the only localities which offer suitable conditions for the germination and growth of the seeds .... are the tips of branches or the shoots of young trees beneath. It is to be seen that no animals are to be found in the habitat of the parasite which would in ordinary usage carry the seeds to these locations."[3]

So much for the dissemination of Razoumofskya; with our other genus

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[1] Notas Biologicas sobre Gallaretas y Macas. Par Roberto Dabbene. Ann. Mus. Nac. Hist. Nat. Buenos Aires, XXVIII, pp. 183–192. July 19, 1916.

[2] Weir, James R. Bull. 317, U. S. Dept. Agr., Jan. 20, 1916, p. 24, and Bull. 360, June 17, 1916, p. 34.

[3] Minnesota Botanical Studies 2, p. 172, 1899.

(*Phoradendron*) of mistletoes things are quite different as the seeds are seldom distributed from tree to tree (except by gravity) by any agencies besides birds and other animals. These mistletoes are the most injurious also as they are known to kill many trees. The birds that are important disseminators of Phoradendron in Texas are, according to Professor H. H. York,[1] Mockingbirds, Sparrows, and Cardinals, and according to Dr. W. L. Bray,[2] Mockingbirds, Cedarbird and Robins.

Dr. Bray says: "It is the conclusion of most observers that the Mockingbird is the chief distributor of mistletoe seed, but perhaps the cedar birds actually distribute more, for in March and April these birds appear in flocks of hundreds in search of berry mast — especially hackberries — and during the brief visits of a few days or a week or two all the berry-laden trees are visited repeatedly until the berries are gone. During these flights, mistletoe berries are also eaten, though probably not much noticed until the hackberry crop is exhausted. Robins also are reported to be common distributors of mistletoe seed. In the vicinity of Austin large flocks of robins spend the winter, or part of it, in the cedar brakes, where they feed largely on cedar mast; but at times they appear in numbers about farmyards and in towns, feeding upon hackberries, and during these visits also upon mistletoe berries."

The birds which the Biological Survey has found to feed upon Phoradendron berries and which therefore distribute the seeds are the California Jay, Cedarbird, Phainopepla, California Thrasher, Hermit Thrush, Robin, Bluebird, and Western Bluebird.

While the problem of controlling mistletoes is a serious one in some localities, it is not likely that aggressive action against birds will ever be undertaken as a partial solution. The destruction of birds locally would be like dipping water from the ocean; others would come in to take their places and nothing would be gained. On any other scale combating mistletoe by killing birds is unthinkable. Like most pests mistletoe is best controlled by direct attack. Anyone interested in the European experience relating to birds as distributors of mistletoe will find it summarized by C. von Tubeuf in the article indicated by the appended reference.[3]— W. L. M.

Further Data on the Spread of the Chestnut-blight Fungus.— In previous communications to 'The Auk,'[4] the writer has called attention to a publication on birds as carriers of the chestnut-blight fungus and to another which showed the great importance of the wind in distributing

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[1] Bull. 120, Univ. Texas, March 15, 1909, p. 7.

[2] Bull. 166, U. S. Bureau of Plant Industry, Feb. 2, 1910, pp. 11–12.

[3] Naturwiss. Zeitschr. f. Forst. u. Land wirtschaft. 6, H 1, 1908, pp. 47–68.

[4] 32, No. 1, Jan. 1915, p. 119 and No. 3, July, 1915, p. 378.

[5] Studhalter, R. A. and Ruggles, A. G., Insects as Carriers of the Chestnut-blight fungus, Bull., 12, Pennsylvania, Dept. of Forestry, April, 1915, 33 pp., 24 figs.

spores of this serious tree pest. A third paper [5] on this general subject has also been published, and it establishes the fact that insects are important carriers of the blight. "In proportion to size" say the authors, "insects may carry a greater number of spores of the blight fungus than birds. We are led to the conclusion that some insects .... are important agents in the local dissemination of this disease."

These findings make it certain that no large part of the responsibility for spreading chestnut blight can be placed upon birds, for it is evident that bird vectors are far from indispensable to a pest that has at its service, innumerable insects, and the ubiquitous wind.— W. L. M.

Economic Ornithology in Recent Entomological Publications.— The army worm (*Cirphis unipuncta*) is one of those pests of agriculture which appear in large numbers, now here, now there, but which in spite of the sporadic nature of their outbreaks wreak the most serious damage. Never has an infestation of army worms been studied without yielding evidence of the importance of bird enemies of the pest. Mr. H. H. Knight, of Cornell University, who investigated the army worm during the 1914 outbreak in New York, gives the following commendation [1] of the birds: "Certain species of birds were very numerous in fields infested with army-worms. One large hay field, situated on low ground and in the proximity of timber, was frequented daily by a large flock of crows. The crows destroyed the worms so fast that the field never became brown as was the case in all other infested meadows. Flocks of cowbirds and grackles were doing good work in some fields. The meadow lark and the robin were also observed eating the larvae."

In a Farmers' Bulletin [2] giving a general discussion of the army worm, Mr. W. R. Walton, remarks that: "Most fortunately for the farmer, the army worm has many natural enemies among the native insects, reptiles, birds, and mammals ..... According to the records of the United States Biological Survey, more than 40 species of native wild birds are known to eat the army worm in its various stages. Among the most important of these are the following: Crow Blackbird or Grackle, Yellow-headed Blackbird, Chipping Sparrow, Bluebird, Prairie Hen, and European Starling. Domestic Fowls of all kinds will greedily devour the caterpillars and pupæ if allowed to roam over infested fields. Skunks and toads also undoubtedly eat thousands of the army worms, both caterpillars and pupæ. These birds and other animals should therefore be encouraged and protected by the farmer by all possible means."

Damage by the clover leaf-hopper, due to the small size of the pest which is overlooked, is usually attributed to soil or climatic deficiencies. It is really considerable, however, and it is fortunate that natural enemies

[1] The army-worm in New York in 1914, Bull. 376, Cornell Univ. Agr. Exp. Sta., May, 1916, p. 763.

[2] No. 731, U. S. Dept. Agr., May 23, 1916, pp. 9–10.

of the pest make up to some extent for the almost complete omission of measures of control. It is said [1] that:

"The insect enemies of the clover leafhopper seem to be few. Birds appear to be the most important enemies, and among the common species known to eat various species of leafhoppers in numbers are the Nuthatches, Yellow Warbler, Blue-headed Vireo, Long-billed Marsh Wren, Nighthawk, Phœbe, Tree Swallow, Bank Swallow, and Chickadee. In addition to these, over a hundred species of wild birds are known to feed upon leafhoppers. These birds should receive protection at the hands of the farmer."

The author of the foregoing extract has also recently published [2] on the corn and cotton wireworm (*Horistonotus uhleri*), a seriously destructive pest in the eastern half of the United States. It appears that in this case also "comparatively few natural enemies of this wireworm have been noted. No internal parasites have been reared from any stage of the species. Birds feed upon all kinds of wireworms, including those of the genus Horistonotus."

From a Florida publication [3] we learn that birds are appreciated aids in controlling the only serious insect enemy of velvet beans. "The caterpillars have many natural enemies. One of the most important is the 'Rice bird,' also called 'blackbird,' or 'red-and-buff-shouldered-marsh-blackbird.' These collect in great flocks in infested fields. Other birds, especially Mocking-birds, eat many of the caterpillars. It is probably on account of birds alone that small patches of velvet beans planted near woods usually escape with little injury."

Since birds are more or less indiscriminate in their attacks upon insects, beneficial species, as well as injurious, suffer from their predations. Brief comment upon a case of this kind is included by V. L. Wildermuth in his recent account [4] of the California green lacewing fly (*Chrysopa californica*). This neuropterous insect preys upon scale insects, plant lice, leaf-hoppers, and other injurious species and is held to be of real economic value. With regard to its bird enemies, the writer says:

"According to the records of the Biological Survey, United States Department of Agriculture, the Western wood pewee (*Contopus richardsonii*) feeds upon the species at Pasadena, Cal.; and at East Bernard, Texas, the nighthawk (*Chordeiles virginianus*) was found feeding upon the species, the stomachs of two birds containing three and six adults, respectively."

In judging birds in relation to useful insects, it must be borne in mind that a bird may take at a single meal as many insect pests as the insect

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[1] Gibson, E. H., Farmers' Bull. 737, U. S. Dept. Agr., June 26, 1916, p. 5.

[2] Farmers' Bull. 733, U. S. Dept. Agr., June 9, 1916, p. 5.

[3] Watson, J. R., Control of the velvet bean caterpillar, Bull. 130, Fla. Agr. Exp. Sta., June, 1916, pp. 56–57.

[4] Journ. Agr. Research 6, No. 14, July 3, 1916, p. 524.

predator consumes during its whole life. Where the food species are essentially the same from an economic point of view, it would seem that the value of a greater predator is not impaired by its feeding upon a lesser.— W. L. M.

Publications on Bird and Game Preservation.— The constantly increasing number of educational publications dealing with the study and protection of our wild life is a most welcome sign of the general awakening of the public to the importance of this work. Among the journals before us ' The Blue Bird ' continues to stand as a model for local Audubon or bird lovers organizations. Recent numbers contain among other articles a sketch of the Meadow Lark by Edwin L. Jack (April), ' The Genii of the Garden ' [Robin and Chipping Sparrow], by Cordelia J. Stanwood (May), and ' The Hermit Thrush on its Nesting Ground ' by Edwin L. Jack — all well illustrated. ' California Fish and Game ' for July includes Teachers' Bulletin No. 7 on the control of the English Sparrow, a problem which is attracting widespread interest, ' Fin, Feathers and Fur ' continues to keep Minnesota sportsmen and bird lovers posted on matters of interest. Louisiana contributes an excellent report of State Ornithologist Stanley C. Arthur in the ' Annual Report of the Conservation Commission of Louisiana ' on bird protection in the State, while Mr. E. A. McIlhenny reports on game breeding on the State game farm. Mr. Earle A. Brooks, has prepared a notable report on ' The Food of West Virginia Birds ' published by Hon. H. E. Williams, Commissioner of Agriculture. The whole question of the economic value of birds is treated in an attractive way backed by data from recognized authorities, and well illustrated.

Abroad, ' Bird Notes and News,' summer number 1916, tells of a revival of the attempt in England to pass the plumage importation bill while the ' Ornithologische Monatsschrift ' for May and June, 1915, which has just reached us, contains an extended article on bird song by Messrs. Stadler and Schmitt as well as the usual local notes. — W. S.

The Ornithological Journals.

Bird-Lore. XVIII, No. 4. July–August, 1916.

Birds of Monument Valley Park, Colorado Springs, Colorado. By E. R. Warren.

A Home in the Forest. By Florence M. Bailey.— A Study of Nesting Sierra Creepers.

A Merganser Family. By May D. Lewis.— In the Adirondacks.

A Successful Bird Exhibit. By Frederick Greenwood.

Notes on the Plumage of North American Birds. By F. M. Chapman, with colored plate by Fuertes. Covers the Pipits and Dipper.

The Educational Leaflet treats of the Veery.

The Condor. XVIII, No. 3. May–June, 1916.

The Shadow-Boxing of Pipilo. By Donald R. Dicky.

A Populous Shore. By Florence M. Bailey.— Venice, Cal.

Nesting of the Band-tailed Pigeon in Southern Arizona. By T. C. Willard.

The Speed of Flight in Certain Birds. By Alex. Wetmore.— Compared with that of an automobile the speed of which was known.

A Visit to Hat and Egg Islands, Great Salt Lake. By R. H. Palmer.

Nesting of the Tolmie Warbler in the Yosemite Valley. By Margaret W. Wythe.

Some Distributional Notes on California Birds. By H. E. Wilder.

The Condor. XVIII, No. 4. July–August, 1916.

Breeding of *Tiaris canora*, and Other Notes from the U. S. Naval Station, Guantanamo Bay, Cuba. By Dr. T. W. Richards.

Meeting Spring Half-way. By Florence M. Bailey. At Texarkana.

On Bicycle and Afoot in the Santa Catalina Mountains. By F. C. Willard.

Birds Seen in the Valley of the South Fork of the Flathead River, Montana. By Norman deW. Betts.

The Sahuaro Screech Owl as a Recognizable Race. By H. S. Swarth.— Opposes Ridgway's opinion that *Otus a. gilmani* = *cineraceus*.

A New Ruffed Grouse, from the Yukon Valley. By Joseph Grinnell.— *Bonasa umbellus yukonensis* (p. 166).

Migration and Field Notes from Fresno County, California. By J. G. Tyler.

The Oölogist. No. 5. May 15, 1916.

Eggs of Birds and Reptiles. By R. W. Shufeldt.

Some Western Birds. By D. I Shepardson.— Hummingbirds of Los Angeles. Also California Bush-tit in June issue.

Becoming acquainted with the Marsh Hawk. By S. H. Burnham.

The Oölogist. No. 6. June 15, 1916.

Nesting of the Wilson Warbler in New Jersey. By Louis S Kohler.— This must be a case of mistaken identity as Wilson's Warbler has only been found nesting from northern Maine and Minnesota northward. The nest was destroyed and the bird not taken.

The Oölogist. No. 7. July 15, 1916.

Red-breasted Nuthatch. [Nesting in Mass.] By R. I. Giles.

The Ibis. X series, IV, No. 3. July, 1916.

A List of Birds collected in Uganda and British East Africa, with notes on their Nesting and other Habits. Part II. By V. G. L. Someren.— This includes the Passerine birds, 317 in number.

Note on the Distribution and Nesting Habits of *Falco peregrinus pealei* Ridgway. By C. deB. Green.

The assumption of Summer Plumage in *Pyromelana oryx*. By A. G. Butler.— Another assertion that repigmentation of feathers takes place, although on the basis of the very same specimens, the Editor and others refute the author's views in a supplementary note. Like many others Dr.

Butler seems to have overlooked Dr. R. M. Strong's paper on the structure of feathers in which he shows that the alleged process of repigmentation is impossible.

Field-notes on Some of the Waterfowl of the Argentine Republic, Chile, and Tierra del Fuego. By F. E. Blaauw.

On the Bird-life of Hartman's Abrolhos Islands, Western Australia. By C. P. Conigrave.— Illustrated by beautiful half-tones.

Bulletin of the British Ornithologists' Club. CCXVI. May 25, 1916.

New Forms described—by E. C. Stuart Baker, *Rhipidura albicollis stanleyi* (p. 81), Meshmi Hills; by Dr. E. Hartert. *Pomatorhinus schisticeps fastidiosus* (p. 81), Ko-Khan, Malay Peninsula; and by Mr. G. M. Mathews nine races of Australian birds.

Bulletin of the British Ornithologists' Club. CCXVII. July 7, 1916.

New Forms described—by Dr. Hartert, *Brachypteryx poliogyna mindorensis* (p. 87), Mindoro, and by Mr. G. M. Mathews fourteen races of Australian Birds.

British Birds. X, Nos. 1–4. June 1 to September 1, 1916.

Some Breeding Habits of the Sparrow Hawk: (1) The Effect of Rain. By J. H. Owen.— With remarkable photographs of parents and nestlings. (2) The Hen at the Nest (in No. 2). (3) The Cock (in No. 3). (4) The Nestling (in No. 4).

The Moults of the British Passeres. By H. F. Witherby.— Covers, the Motacillidæ.

Avicultural Magazine. VII, No. 8. June, 1916.

Breeding of Buffon's Touracos. By Jean Delacourt.— Development of young described.

Avicultural Magazine. VII, No. 9. July, 1916.

About Birds Along the River near Oudtshoorn [Cape Colony]. By F. E. Blaauw.

Birds in Macedonia. By Capt. B. E. Potter.

Avicultural Magazine. VII, No. 10. August, 1916.

On the Breeding of the Emperor Goose. By F. E. Blaauw.

The Emu. XVI, Part I, July, 1916.

An Ornithological Cruise Among the Islands of St. Vincent and Spencer Gulfs, S. A. By S. A. White.— Annotated list of sixty-four species, *Sericornis maculatus rymilli* subsp. nov. (p. 14), Wedge Island.

Bird Life on Yauko Creek, N. S. W. By Charles Barrett.

Observations at Bremer Bay, W. A. By W. B. Alexander.— Notes on 81 species.

Field Notes on Three Species of the Pachycephalinæ. By A. H. Chresholm.

Notes from Western Australia. By W. B. Alexander.

The Haunt of the Lyre-Bird. By A. C. Stone.

Further Notes on the Spotless Crake (*Porzana immaculata*). By Miss J. A. Fletcher.

Birds in Melbourne Zoological Gardens. By D. Le Souëf.

A number of excellent half-tones from photographs are to be found in this number.

The South Australian Ornithologist. II, Part 7. July, 1916.

A New Scrub Wren. By S. A. White.— *Sericornis longirostris wyldei* (p. 169), Coorong.

Birds of the North and North-west of Australia. No. 6. By G. M. Mathews.

Further Observation on the Cormorants and Bird Temperatures. By A. M. Morgan.— Penguins showed average temperature of 101.3 F.; Mutton-birds, 100.2 F., and laying Leghorn hens 107.7.

Biography of S. White, continued.

Revue Francaise d'Ornithologie. VIII, No. 86. June 7, 1916. [In French.]

Birds in the Ornithological Park of Villers-Bretonneux near Amiens. By J. Delacour.

Voracity of Gulls, Wild and Captive. By E. Seguin-Jard.

Revue Francaise d'Ornithologie. VIII, No. 87, July 7, 1916.

Biological Observations on the Birds of Kerguelen. By J. Loranchet.— Continued in No. 88–89.

Revue Francaise d'Ornithologie. VIII, No. 88–89. Sept. 7, 1916.

The War and Birds at the Front. By R. Reboussin.

Ornithologisches Jahrbuch. XXVII, 1–2. January–April, 1916. [In German.]

Probable Origin and History of the Bird Associations of Middle Switzerland. By W. Knopfli.

Ornithological Articles in Other Journals.

Pearson, T. Gilbert. Bird Protective Laws and their Enforcement. (Amer. Mus. Journal, May, 1916.)

Burr, Malcolm. A Dilettante in the Caucasus — Deals mainly with birds. (Zoologist, June 15, 1916.)

Selous, E. A Diary of Ornithological Observations Made in Iceland during June and July. (*Ibid.*, July 15, 1916.)

Baxter, E. V., and **Rintoul,** L. J. Report on Scottish Ornithology in 1915, including migration. (Scottish Naturalist, July–August, 1916.)

Saunders, W. E. The Barn Owl Nesting in Southeastern Ontario. (Ottawa Naturalist, June–July, 1916.)

Shannon, Howard J. Insect Migrations as related to those of Birds. (Scientific Monthly, September, 1916.)

Taverner, P. A. List of Specimens Collected by Capt. Jos. Bernard, on

the Arctic Coast, N. W. T., Canada. (Summary Rept., Geol. Survey Canada for 1915.)

Parsons, W. C. A Little Nature Study of the Wood Duck and his Family. (Forest and Stream, September, 1916.)

West, C. S. Family Life of the Ruffed Grouse. (*Ibid.*).

Baker, E. C. Stuart. Game Birds of India, Burma and Ceylon. (Journ. Bombay Nat. Hist. Soc., January, 1916.)

Osmuston, A. E. Curious Habits of Woodpeckers in the Kumaan Hills. (*Ibid.*)— Boring holes similar to those of *Sphyrapicus*. The work is attributed to *Hypopicus hyperythris*.

Robinson, H. C., and **Kloss,** C. Boden. Diagnoses of Some New Species and Subspecies of Mammals and Birds obtained in Korinichi, W. Sumatra, June, 1914. (Jour. Straits Branch Royal Asiat. Soc. 1916.) — New birds are *Pisorhina vanderwateri* (p. 275), *Serilophus lunatus intensus* (p. 276), *Turdinulus epilepidotus dilutus* (p. 276), *Turdus indrapuræ* (p. 277), *Cryptolopha sumatrensis* (p. 277) and *Dicaeum beccarii* (p. 278) all from Korinchi and *Cryptolopha muhleri* (p. 278) from Barong Bhara, Barisan Range.

Salvadori, Tommaso. Historical Account of the Ornithological Collection of the Turin Museum. (Mem. R. Acad. delle Scienze di Torino II, LXV, No. 5.).— List of types and cotypes is appended. [In Italian.]

Publications Received.— **Bangs,** Outram. (1) The American Forms of *Gallinula chloropus* (Linn.). (Proc. N. E. Zoöl. Club, V, pp. 93–99, May 17, 1915.) (2) A Collection of Birds from the Cayman Islands. (Bull. Mus. Comp. Zool., LX, No. 7, March, 1916.)

Brooks, Earle A. The Food of West Virginia Birds. Published by Hon. Howard E. Williams, State Commissioner of Agriculture, Charleston, W. V., 1916, pp. 1–74.

Buturlin, S. A. (1) A Short Review of the Nuthatches (Fam. Sittidæ). (Travaux Soc. Imp. Nat. Petrograd., XLIV, Nov. 2, 1916.) (2) Notes on Palæarctic forms of *Pinicola enucleator* (L.) (Messager Ornith. 1915, p. 239.)

Carnegie Museum, Pittsburg. (1) Nineteenth Annual Report of the Director for the year ending March 31, 1916. (2) Founders Day, 1916.

Chapman, F. M. The Travels of Birds. D. Appleton and Co. 1916. 12mo., pp. 1–160. Price 40 cts.

Cherrie, George K. Two New Birds from Venezuela. New Birds from the Collection of the Collins-Day Expedition to South America. (Bull. Amer. Mus. Nat. Hist., XXXV, pp. 389–397, June 16, 1916.)

Chubb, Charles. The Birds of British Guiana, Based on the Collection of Frederick Vavasour McConnell, Camfield Place, Hatfield, Herts. With a Preface by Mrs. F. V. McConnell. Vol. I. London: Bernard Quaritch, 11 Grafton Street, W. 1916. Roy. 8vo, pp. i–liii + 1–528, pll. I–X. Edition limited to 250 copies. £2. 2s. net.

Cory, Charles B. Descriptions of Apparently New South American

Birds, with Notes on Some Little Known Species. (Publ. 190 Field Mus. Nat. Hist., Ornith. Series, I, No. 10, pp. 337–346, August 30, 1916.)

Dabbene, Roberto. (1) Una subspecie aparentemente nueva de "Neophlocotomus Schulzi (Cab.). (Physis, No. 10, t. II, pp. 167–169, February 12, 1916.) (2) Notas Biologicas sobre Gallaretas y Macas. (An. Mus. Nac. Hist. Nat. Buenos Aires, XXVIII, pp. 183–192. July 19, 1916.)

Ingersoll, Ernest. An Index to Bird-Lore, Volumes I–XV, inclusive. For sale by the Nat. Assoc. Audubon Societies, 1974 Broadway, N. Y. City, pp. 1–46. Price, 50 cents.

Mathews, Gregory M. The Birds of Australia. Vol. V, parts III and IV. Witherby & Co., London. May 23, 1916, and August 30, 1916.

Mullens, W. H., and **Swann,** H. Kirke. A Bibliography of British Ornithology, from the Earliest Times to the end of 1912. Macmillan and Co., Ltd. St. Martin's Street, London. 1916. Part I. 6/ net.

Noble, G. K. A New Dove from St. Croix, Danish West Indies. (Proc. N. E. Zool. Club, V, pp. 101–102. October 4, 1915.)

Phillips, John C. Two Pheasant Crosses. (Jour. Heredity, VII, No. 1, pp. 12–16, January, 1916.

Report of the Conservation Commission of Louisiana, April 1, 1914–April 1, 1916.

Rhoads, S. N. Ponds and Woods Attract Birds [List of Birds of Haddonfield, N. J.]. (Haddon Gazette, April 27, 1916.)

Riley, J. H. Two New Ralliformes from Tropical America. (Proc. Biol. Soc. Wash., pp. 103–104, June 6, 1916.)

Sawyer, Edmund J. Land Birds of Northern New York. A Pocket Guide to Common Land Birds of the St. Lawrence Valley and the Lowlands in General of Northern New York. Published under the Auspices of the Watertown Bird Club. 1916. 12mo., pp. 1–90. For sale by A. C. Rogers, 325 Jay St., Watertown, N. Y., at 35 cts; cloth 50 cts.

Shufeldt, R. W. (1) What's the Good of a Hawk. (Popular Sci. Monthly, August, 1916.) (2) Common Birds Our Greatest Naturalists did not Know Much About. (Recreation, September, 1916.) (3) The New York Zoölogical Park (Sci. Amer. Suppl., June 3, 1916.) (4) The Zoölogical Garden of Cincinnati. (*Ibid.*, July 22, 1916.) (5) Albinism in Animal Life. (Our Dumb Animals, June, 1916.)

Swales, Bradshaw H. The Ornithological Writings of Charles Fox. (Occas. Papers, Mus. of Zoöl., Univ. of Mich., No. 26, April 15, 1916.)

Swenk, Myron H. The Eskimo Curlew and Its Disappearance. (Smithson. Rept. for 1915, pp. 325–340.)

Taverner, P. A. Zoology in Summary Rept. Geol. Survey Canada, for 1915. pp. 249–264.

Thayer, John E. and **Bangs,** O. A New Song Sparrow from Nova Scotia. (Proc. N. E. Zoöl. Club, V, pp. 67–68, May 29, 1914.)

Todd, W. E. Clyde. On Dysithamnus mentalis and its Allies. (Bull. Amer. Mus. Nat. Hist., XXXV, pp. 533–560, August 10, 1916.)

Witherby, H. F. The Moults of the British Passeres with Notes on the Sequence of their Plumages. (British Birds, IX, Nos. 6, 7, 9 and 12.)

Wood, N. A., Smith, F. and Gates, F. C. The Summer Birds of the Douglas Lake Region, Cheboygan Co., Mich. (Occas. Papers, Mus. Zoöl., Univ. Mich., No. 27, May 15, 1916.)

American Museum Journal, The, XVI, No. 5, May, 1916.

Avicultural Magazine, (3) VII, Nos. 8, 9 and 10, June–August, 1916.

Bird-Lore, XVIII, No. 4, July–August, 1916.

Bird Notes and News, VII, No. 2, summer, 1916.

Blue-Bird, The, VIII, Nos. 5, 6 and 7, April–June, 1916.

British Birds, X, Nos. 1, 2, 3 and 4, June–September, 1916.

Bulletin British Ornith. Club, CCXVI and CCXVII, preface, etc. to Vol. XXXVI.

Bulletin of the Charleston Museum, XII, No. 5, May, 1916.

California Fish and Game, II, No. 3, July, 1916.

Condor, The, XVIII, Nos. 3 and 4, May–June and July–August, 1916.

Emu, The, XVI, Part 1, July, 1916.

Fins, Feathers and Fur, No. 6, June, 1916.

Forest and Stream, LXXXVI, Nos. 7–9, July–September, 1916.

Ibis, The, (10) IV, No. 3, July, 1916.

New Jersey Audubon Bulletin, Nos. 14 and 15, July and September, 1916.

Oölogist, The, XXXIII, Nos. 5, 6, 7 and 8, May–August, 1916.

Ornithologische Monatsschrift, XL, Nos. 5 and 6, May–June, 1915.

Ornithologisches Jahrbuch, XXVII, Heft 1–2. January–April, 1916.

Ottawa Naturalist, The, XXX, Nos. 2 and 3–4, May, and June–July, 1916.

Philippine Journal of Science, XI, Sec. D, No. 3, May, 1916.

Records of the Australian Museum, XI, No. 2, May 1, 1916.

Revue Française d'Ornithologie, VIII, Nos. 86, 87 and 88–89, June–September, 1916.

Science, N. S., XLIII, Nos. 1119–1134.

Scottish Naturalist, The, Nos. 54 and 55–56, June, and July–August, 1916.

South Australian Ornithologist, The, II, Part 7, July 1, 1916.

Transactions, Wisconsin Academy of Sciences, Arts and Letters, XVIII, Part 1, 1915.

Zoölogist, The, XX, Nos. 234, 235 and 236, June–August, 1916.

CORRESPONDENCE.

Present Work of Gerhard Heilmann.

EDITOR OF 'THE AUK,'

It requires over a month to get a letter through from Denmark in these days of the senseless and destructive war in Europe. My last one from the distinguished Danish ornithologist, Gerhard Heilmann, was posted at the Sanatorium on the Nakkebölle Fjord, on the north coast of Denmark, on the 12th of last July, and it did not come into my hands until the 15th of August; it had been opened by an English censor and resealed (No. 4108).

This letter contains some very interesting notes that go to show that ornithology is not entirely extinct in Europe in these turbulent times. Among other matters, Mr. Heilmann writes me that he has built for himself, on the shore of the fjord, a small, one-room house of wood (3 × 5 meters), with a glass skylight. In this he paints his magnificent bird pictures during all kinds of weather. As he was penning his letter to me in this room, gulls and terns were constantly passing over his glass roof, and from his small window he could see yellow-hammers, black-birds, goldfinches, two species of wagtails (white and yellow), linnets, "and also a single nightingale seeking food for its young in its nest in the meadow near by." He says further that during June (1916), the woods immediately to the rear of his hut was filled with many kinds of birds, and their "morning concert was marvelous."

In addition to this hut he has built himself a very large wire aviary for gulls and ducks. This structure extends out over the waters of the fjord for a distance of fifteen meters, so that, when he is sitting in this cage, he can study many species of land and water birds at very close range. He is taking extensive notes on the variations they exhibit, as they fly, swim, or walk close to him. To study the big birds of prey, he has built a still larger cage, and he contemplates the building of one as big as both the others combined, in the near future, in which he will keep for study a number of species of the herons of Europe.

Mr. Heilmann will soon publish an article in Copenhagen on *Podiceps griseigena*, which he has painted life size, swimming under the surface of the water, "a very difficult task." This article will be beautifully illustrated by half-tones (colored) of the living bird, with other illustrations.

I believe it will be of interest to American ornithologists to learn that Mr. Heilmann has given to Mrs. Shufeldt and myself the sole right of translating into English his superb work on 'The Origin of Birds,' which, when published, will be the only English translation of the volume. Arrangements have been made with its original publishers at Copenhagen to send on the blocks for the 215 figures illustrating the work; so that now

is only required a reliable publishing house in this country, willing to undertake the enterprise, when the labor of translating from Danish into English will be entered upon, and the work pushed to a finish as rapidly as possible. When issued this work will be of the greatest value to all English speaking ornithologists, and to avian palæontologists as well.

Faithfully yours,

R. W. Shufeldt.

3356–18th Street,
Washington, D. C.
August 18, 1916.

NOTES AND NEWS.

John Alexander Harvie-Brown, D. D., an Honorary Fellow of the American Ornithologists' Union, died at his residence, Dunipace House, Stirlingshire, Scotland, July 26, 1916. He was born at Dunipace August 27, 1844, and spent his life there being a landed proprietor and an excellent example of a gentleman of leisure who devoted himself to natural history.

He was best known for his work in connection with the splendid 'Vertebrate Fauna of Scotland,' of which he was chief editor and author of many of the volumes. He was also the founder, owner and joint editor of the 'Annals of Scottish Natural History,' as well as a staunch supporter of its successor 'The Scottish Naturalist.' While his chief interest lay in the study of his home country, and the outlying Hebrides, Orkneys and Shetland Islands, he in early life explored the Petchora and Dwina valleys with Seebohm and Alston, and parts of Transylvania with Danford. The ornithological results of these trips appeared later in 'The Ibis.' He was much interested in bird migration and was a member of the committee of the British Association appointed for investigation in this field.

The collection of skins and eggs which he had formed in conjunction with Col. Feilden was destroyed by fire in 1897 and the loss was a severe blow to him.

In later life, in fact for many years, Dr. Harvie-Brown was unable to travel about and was known to the present generation of ornithologists mainly through his publications and through correspondence.

Dr. Harvie-Brown became a member of the British Ornithologists' Union in 1873 and was elected one of the original Correspondents of the A. O. U. in 1883, being advanced to Honorary Fellowship in 1902. In 1912 the University of Aberdeen conferred upon him the degree of LL.D. in recognition of his services in the cause of Natural History.

LINDSEY LOUIN JEWEL, an Associate of the American Ornithologists' Union, died of tuberculosis at Saranac Lake, N. Y., on September 5, 1915.

Mr. Jewel was born at Christiansburg, Va., on November 24, 1877, and was graduated in 1900 with the degree of B. S. from the Virginia Polytechnic Institute. Two years later he received the degree of Civil Engineer from the same institution. While a student he had enlisted in 1898 in the 2nd Virginia Volunteers for service in the Spanish-American War, and at its close was mustered out with the rank of Corporal.

From 1903 Mr. Jewel was connected with the McClintic-Marshall Construction Company of Pittsburgh, Pa., and in 1910 was sent by them to the Canal Zone in charge of the lock gate erection, and was thus engaged when, in the autumn of 1912, he organized the Central American Construction Company, and was chosen its President and Chief Engineer. Before his return to the United States in October, 1913, in search of health, his company had completed some important constructions in the Zone. In recognition of his interest in development work in the Zone, President Wilson, in 1913, had appointed him United States Vice-Consul at Colon.

The end, hastened by the death of his wife, his companion since childhood, came only after a wonderfully brave fight. No children survive.

Mr. Jewel was a Member of the National Association of Audubon Societies and was elected, in 1910, a Member of the American Society of Civil Engineers, of which he had been an Associate Member since 1906. His chief ornithological work consists of a collection of some 400 beautifully prepared skins of Panamanian birds (with some nests and eggs) now preserved in the Museum of the Academy of Natural Sciences of Philadelphia. In the preparation of many of these, particularly hummingbirds, his wife skillfully assisted him. Readers of 'The Auk' will remember his article on 'Some North American Birds in Panama' (Auk, 1913, pp. 422–429).

Mr. Jewel's most kindly and friendly hospitality to another Associate of the Union, and the writer on the occasion of their visit to the Zone in 1912 contributed very greatly to the enjoyment and success of that visit. The President Emeritus of his Alma Mater writes that Mr. Jewel had, 'before reaching middle life, won for himself in the short period of time allowed him on earth, a position of wide and commanding influence and placed to his credit a surprising amount of engineering work of the highest grade and value.'— C. H. R.

JOHN CLAIRE WOOD, well known in Michigan as an oölogist and ornithologist, died June 16, 1916, at his home in Detroit, aged 45 years. Mr. Wood was born on July 27, 1871, at Saline, Washtenaw Co., Mich., and came to Detroit in 1878 where he spent the remainder of his life. He was educated in the Detroit public schools, and early took up the profession of surveying. He was for many years a member of the firm of Mason L. Brown and Co., and attained considerable prominence as an efficient civil engineer.

From his early boyhood he was intensely interested and devoted to ornithology, and especially to oölogy. His collection of some 8000 eggs

in sets was well representative of the United States. His own collecting was done carefully, and his specimens prepared with exceptional neatness. As a field worker Wood was keen, persistent, and tireless; his climbing abilities and fearlessness were remarkable. His knowledge of southern Michigan birds in the field was excelled by no one, and many of the local records are due to his acuteness and familiarity with the notes and habits of all of our birds. I know of no one that prepared a finer bird skin.

Mr. Wood was not of a bookish or literary nature, and his writings consisted mainly of short notes of a faunal or oölogical nature. Personally he was of a somewhat retiring disposition, and mingled but little with others of kindred interests. He was a trained athlete and a splendid shot.

He was a prominent member of the now defunct Michigan Ornithological Club, the Wilson Ornithological Club, Cooper Ornithological Club, and an Associate of the American Ornithologists' Union. Mr. Wood's death so early in life is a decided loss to ornithology and to Michigan in particular.

He is survived by his widow and five children. — B. H. S.

Col. Herbert Hastings Harrington, the British ornithologist, noted for his work on the 'Birds of Burma' (1909) and for numerous papers on Indian birds, was killed in the campaign in Mesopotamia on March 8, 1916. He was born on January 16, 1868, at Lucknow. His publications appeared mainly in 'The Ibis' and the 'Journal of the Bombay Natural History Society' and many of the new species that he discovered have been named in his honor.

Lt. Col. Boyd Robert Horsbrugh, well known as the author of 'The Game Birds and Water-Fowl of South Africa' and of numerous articles in 'The Avicultural Magazine' died at his home in Surrey, England, on July 11, 1916, having been invalided home from France in 1915. Col. Horsbrugh was born at Poona, July 27, 1871.

A treaty between the United States and Great Britain for the protection of migratory birds in the United States and the Dominion of Canada was signed on August 16 and ratified by the Senate on August 29, 1916. This treaty, the first ever entered into between the United States and a foreign country for the protection of birds, marks the beginning of a new era in bird protection in America and affects a greater area than any similar treaty ever in force in Europe. Provision is made for the protection of all migratory birds in North America north of the southern border of the United States except in Newfoundland, Labrador and Greenland.

The treaty includes nine articles. Article I divides migratory birds into game birds, insectivorous birds, and other nongame birds, and adopts the A. O. U. definition of game birds including the five groups, *Anatidæ Gruidæ, Rallidæ, Limicolæ,* and *Columbidæ.* In Article II, provision is made for open seasons on game birds not to exceed three months and a half

in length between September 1 and March 10, except that the seasons on *Limicolæ* in the Maritime Provinces of Canada and in the States on the Atlantic seaboard north of Chesapeake Bay may be fixed between August 15 and February 1. There is no open season for insectivorous birds. Indians and Eskimos are permitted to take auks, guillemots, murres, puffins and their eggs for food or their skins for clothing. Article III provides a ten-year close season for band-tailed pigeons, cranes, swans, curlew and all the smaller shorebirds, and Article IV, special protection for the wood-duck and eider duck either by a five-year close season, by establishment of refuges, or otherwise. Article V permits the taking of nests and eggs for scientific and propagating purposes under such regulations as the respective governments may deem appropriate and the issue of these permits by the proper authorities is provided in Article VII. Article VI prohibits international traffic in migratory birds or their eggs during the continuance of the close season and requires all packages containing birds or eggs to be properly marked with the name of the shipper and a statement of the contents. Articles VIII and IX provide that the respective governments shall take the necessary measures to insure the execution of the treaty, which shall continue in force for fifteen years and then from year to year unless either party gives notice of its intention of terminating its operation.

The treaty will become effective as soon as ratifications are exchanged and a bill to carry out its provisions will be introduced at the next session of Congress.— T. S. P.

From the Annual Report of the director of the Carnegie Museum of Pittsburgh we learn that the collection of birds now numbers 51,989 specimens, representing approximately 5000 species. A restoration of the Dodo and Great Auk have recently been acquired from Rowland Ward, the former of which is figured in the 'Founders Day Report' of the Carnegie Institution.

As previously announced the thirty-fourth stated meeting of the American Ornithologists' Union will be held at the Academy of Natural Sciences, in Philadelphia, November 14–16, with a business meeting of Fellows and Members on the 13th.

While the leading ornithologists of the country and a constantly increasing number of Associates are regular attendants at these meetings, there are a large number who read the annual notices in a purely perfunctory manner without considering seriously the possibility of attending. It is this class — those who have never attended a meeting — that we would earnestly urge to make their plans at once for being present at Philadelphia on November 14.

The program is always interesting and instructive; but it is the informal social intercourse with ornithologists from all parts of the country that counts for more in broadening our views, suggesting fields of work and

arousing anew our enthusiasm for our favorite study. The daily midday luncheons, the informal dinner on the evening of the 14th and the smoker in the ornithological rooms of the Academy which has been arranged for the evening of the 15th, offer abundant opportunities for informal discussion.

Then the many historical points of interest which are to be seen about Philadelphia — Audubon's home on the Perkiomen, Bartram's house on the Schuylkill, which is so closely identified with Alexander Wilson — are objective points for delightful outdoor trips.

A large registration benefits not only those who are fortunate enough to be present at a meeting, but strengthens the whole A. O. U. as an organization. Therefore let us make this thirty-fourth meeting the best in the history of the society and plan at once to be present.

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ERRATA.

Page 69, line 3, for **leucomelas** read **villosus**.
" " 3, for NORTHERN HAIRY read HAIRY.
" " 12, for NORTHERN DOWNY read DOWNY.
" 73, " 15, for Common resident read Resident.
" " 31, for March 10 read March 1.
" 78, " 1, for *philadelphia* read *philadelphica*.
" 146, " 1, for Toucans read Hornbills.

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MEETINGS
OF THE
American Ornithologists' Union

Since its organization in 1883 the American Ornithologists' Union has held one special and 33 annual meetings.

These meetings have been held in six cities: 11 in New York, 10 in Washington, 7 in Cambridge (including 1 in Boston), 4 in Philadelphia, and 2 (one special) in San Francisco. Twenty-six meetings have been held in November and eight in other months.

The number of Fellows (known as Active Members prior to 1902) has always been limited to 50 and the number present at any meeting has varied from 7 to 28. The attendance of other classes of members in recent years averages over 100.

Meeting	Date	Place	Fellows Present	Total Membership
1	1883, Sept. 26–28	1st New York	21	23
2	1884, Sept. 30–Oct. 2	2d New York	16	143
3	1885, Nov. 17–18	3d New York	16	201
4	1886, Nov. 16–18	1st Washington	20	251
5	1887, Oct. 11–13	1st Boston	17	284
6	1888, Nov. 13–15	2d Washington	20	298
7	1889, Nov. 12–15	4th New York	20	400
8	1890, Nov. 18–20	3d Washington	20	465
9	1891, Nov. 17–19	5th New York	14	493
10	1892, Nov. 15–17	4th Washington	20	557
11	1893, Nov. 20–23	2d Cambridge	17	582
12	1894, Nov. 12–15	6th New York	15	616
13	1895, Nov. 11–14	5th Washington	19	667
14	1896, Nov. 9–12	3d Cambridge	14	673
15	1897, Nov. 8–11	7th New York	18	679
16	1898, Nov. 14–17	6th Washington	21	695
17	1899, Nov. 13–16	1st Philadelphia	16	744
18	1900, Nov. 12–15	4th Cambridge	19	748
19	1901, Nov. 11–14	8th New York	18	738
20	1902, Nov. 17–20	7th Washington	25	753
20a	1903, May 15–16	1st San Francisco	7	—
21	1903, Nov. 16–19	2d Philadelphia	19	775
22	1904, Nov. 28–Dec. 1	5th Cambridge	17	808
23	1905, Nov. 13–16	9th New York	17	860
24	1906, Nov. 12–15	8th Washington	24	750
25	1907, Dec. 9–12	3d Philadelphia	20	850
26	1908, Nov. 16–19	6th Cambridge	17	888
27	1909, Dec. 6–9	10th New York	19	866
28	1910, Nov. 14–17	9th Washington	23	897
29	1911, Nov. 13–16	4th Philadelphia	18	887
30	1912, Nov. 11–14	7th Cambridge	18	929
31	1913, Nov. 10–13	11th New York	28	992
32	1914, Apr. 6–9	10th Washington	27	1101
33	1915, May 17–20	2d San Francisco	11	1156

The next regular meeting — the 34th Stated and the 5th Philadelphia meeting — will be held at the Academy of Natural Sciences, Philadelphia, Nov. 14–16, 1916.